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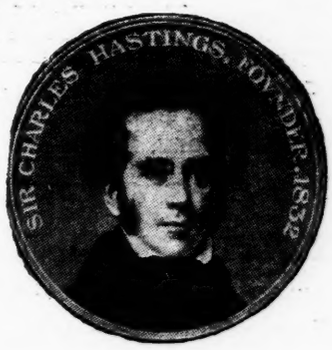

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THE CHOROID PLEXUS AND PSAMMOMAS.

AN EMERITUS LECTURE DELIVERED AT THE MIDDLESEX HOSPITAL, FEBRUARY 7TH, 1922.

BY

SIR JOHN BLAND-SUTTON, F.R.C.S.,
CONSULTING SURGEON TO THE HOSPITAL.

THE ruffle-like structures, called choroid plexuses, which float in the ventricular fluid of man's brain, have aroused the curiosity of anatomists for centuries, yet they took little more interest in them than gardeners take in weeds. Of late these plexuses have acquired importance for pathologists and clinicians.

THE CHOROID PLEXUS.

In the living brain a choroid plexus is red, for it is well supplied with blood, and the fringes floating in pools of

FIG. 1.—Diagram of a mammalian brain showing the distribution of the choroid plexuses.

cerebro-spinal fluid resemble the beautiful long red gills of the larva of the Alpine salamander.

In order to understand the relations of the various plexuses it is worth while to review their distribution. The velum interpositum with which they are so intimately connected, indeed it is the supporting structure of the plexuses, is a fold of pia mater, and arachnoid, buried in the brain when the primary cerebral vesicles turn backward to envelop the primary encephalic vesicles which ultimately become the third and fourth ventricles; the middle vesicle persists as the aqueduct of Sylvius. All parts of the velum which come in close relations with the ventricles are richly furnished with vascular epithelial tufts. These tufts reach their highest development along the fringes of the velum, which extend into the lateral ventricles, and its cornua. The fourth ventricle has a rich choroid plexus, and the villi are big in the lateral recesses; at the orifices of these infundibula the plexus floats in the fluid of the pool called the cisterna magna. There is a mystery surrounding the lateral recesses of the fourth ventricle. The orifice of each recess is in close relation with the slight depression in the petrosal marking the centre of the circle formed by the posterior semicircular canal; this spot marks the osseous grave of the bulbus endolymphaticus. In some fishes the duct of the swim-bladder is in communication with the ductus endolymphaticus; the communication may be direct, or through the intervention of a chain of ossicles to which classical and picturesque names have been applied—tripus, scaphium, and claustrum. Is this the remains of an old communication between the canal system of the internal ear and the intracerebral collection of fluid?

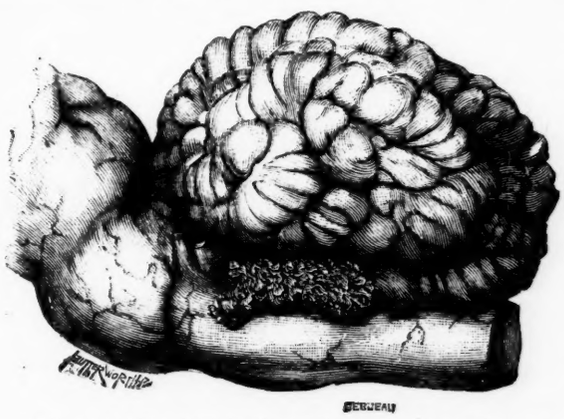

FIG. 2.—Lateral view of the cerebellum and medulla of a horse showing a cluster of the choroid plexus around the orifice of the lateral recess of the fourth ventricle.

In the fourth ventricle of the horse's brain the choroid plexus forms a conspicuous ring around the orifice of each lateral recess. When the brain is removed from the skull the plexus forms a bunch and conceals the opening, but if the brain be immersed in water the orifice of the recess is easily seen. The plexus at each lateral recess rests upon the roots of origin of the glosso-pharyngeal and vagal nerves.

The orifices of the lateral recesses of the fourth ventricle establish communication between the ventricular cavities of the brain and the general subarachnoid spaces of the brain and spinal cord. The foramen of Magendie, described as existing at the apex of the calamus scriptorius, is, I believe, an artefact. It does not exist in the horse.

Choroid plexuses are highly developed arachnoid tufts and often contain cholesterin. They are glandular organs and secrete cerebro-spinal fluid. The plexus differs from other secreting glands in having its secreting cells on its outer surface. There is convincing experimental proof that most of the cerebro-spinal fluid is secreted above the aqueduct of Sylvius.

My interest in the clinical importance of the choroid plexuses was aroused especially in relation with the plexus of the fourth ventricle. In 1886 J. H. Douty, at that time medical officer at the asylum, Powick, sent me the cerebellum and bulb, obtained from a lad aged 17, who died there after manifesting violent symptoms indicating a tumour of the brain. On examining the parts I found the fourth ventricle crammed with a tangled overgrown choroid plexus, forming a mass as big as a bantam's egg. The lateral recesses were tightly stuffed with villous tufts. The interventricular communications were completely obstructed and the aqueduct of Sylvius much dilated.

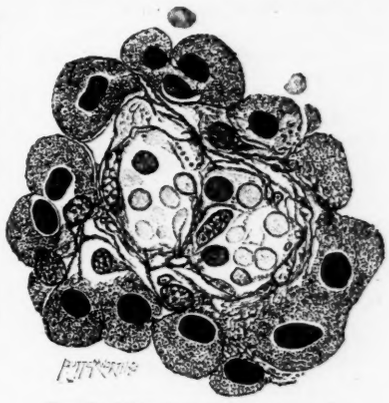

FIG. 3.—Microscopic characters of a choroid plexus (Morowoka).

The boy died from an overgrowth of the choroid plexus of the fourth ventricle. In the terms of pathology it was a crowd of papillomas. This is by no means an isolated case, and I have collected several similar examples, and each had a tragic ending. Papillomatous masses in the fourth ventricle illustrate the baneful effects environment imposes even on simple tumours. Parallel conditions occur in the larynx, in the conduits of the urinary organs, and in the bladder. In the brain the danger lies not only in the interruption of the interventricular waterway, but also from the pressure the clumps at the orifices of the lateral recesses exert on the roots of the vagi. It also teaches that complete stoppage of the interventricular communications may be as inimical to life as complete obstruction of both ureters.

PSAMMOMAS.

In 1867 Virchow coined the term "psammoma" (sand tumour) for a tumour peculiar to the meninges of the brain and spinal cord. Pathologists subsequently confirmed this observation, and the energy of surgeons has made them familiar objects in museums. Such tumours resemble in shape and size walnuts, and are occasionally bilateral. They are frequent in relation with the lateral recesses of the fourth ventricle, and set up serious symptoms by pressing on the medulla and the roots of the vagus and other important cranial nerves. As a rule, they have slender connexions with the brain. In a remarkable case described by Strahan in 1883, a soldier had bilateral recess tumours. Savage examined the specimen and reported that the tumours had no attachment to the cerebellum, or pons, or medulla, and were loosely connected with the membranes about them.

The microscopic structure of psammomas supports the idea that they arise from choroid plexuses and arachnoid tufts. The tissue is arranged in whorls, and in the centre of each vortex there is a blood vessel. The idea of a cluster of villi

surrounded by fibrous tissue, and the whole encapsuled by a laminated capsule, is irresistible. When the mass of choroid plexus, or arachnoid tuft, is completely invested and growth arrested, the sequestered epithelium becomes impregnated with cholesterin sand. Hence the picturesque names—psammoma, cholesteatoma, and pearl tumour; some gleam like mother-of-pearl.

The infiltration of these tumours with cholesterin resembles the deposition of lime salts in dead uterine fibroids.

A psammoma infiltrated with cholesterin is a dead tumour, but it rarely dies before it has wrecked the life of the man or woman by damaging brain or spinal cord.

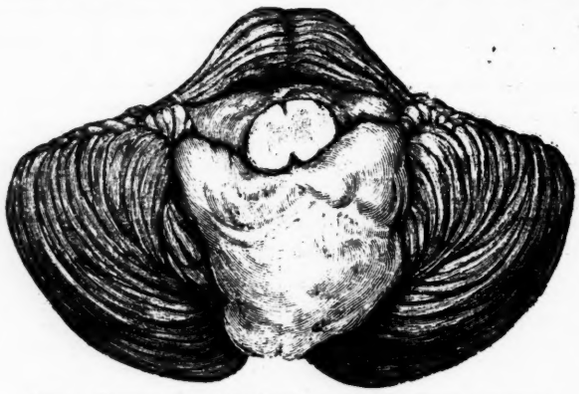

FIG. 4.—Psammoma of the fourth ventricle. From a woman, aged 32. (Museum, Royal College of Surgeons.)

The clinical symptoms produced by these extraordinary tumours sometimes permit of exact localization; often they are complicated tangles, difficult to unravel even with the help, separately or combined, of a neurologist, otologist, ophthalmologist, radiologist, and a physician. In this lecture I am mainly concerned with pathologists.

VILLI IN GENERAL.

Villi of various kinds play a large part in our lives, mainly for good, sometimes for evil. Soon after conception the chorion of the embryo becomes shaggy with exquisite villi, and although the villi are extremely delicate structures they are able to erode the maternal structures with which, in the normal course of events, they come in contact, embed themselves and develop a placenta.

It occasionally happens that they fail to form a placenta, change into peculiar grape-like bodies and transform into what is commonly known as a "hydatid mole." Some years ago obstetricians were startled by the discovery that such erratic changes in the villi sometimes lead to disastrous consequences in fertile women, for these altered villi behave like malignant tumours. They erode blood vessels, colonize the blood, disseminate and quickly cause death. This particular change is now known as chorionic cancer.

There is another variety of villus which occurs only under pathological conditions. Occasionally the ovary is occupied by a cyst, usually unilocular, and its walls are covered by crops of papillomas closely resembling, in structure and appearance, the grape-like bodies of hydatid moles. The papillomas are able to erode the cyst wall and project on its outer surface.

There are two varieties of ovarian papillomatous cysts. One is clinically innocent. The other exhibits malignant properties, for it is not only erosive but it recurs locally and disseminates. I have published an account of one which set up secondary deposits in the mediastinum, and the papillomatous buds eroded the sternum and appeared as papillomatous cysts under the skin. When the papillomas erode the walls of the cyst the minute collections of shed epithelium become engrafted on the peritoneum, and warts, sometimes in thousands, arise from them. When examined microscopically such implanted warts are often found to be encapsuled by peritoneal exudation, and thus recall in miniature the encapsuled psammomas of the meninges.

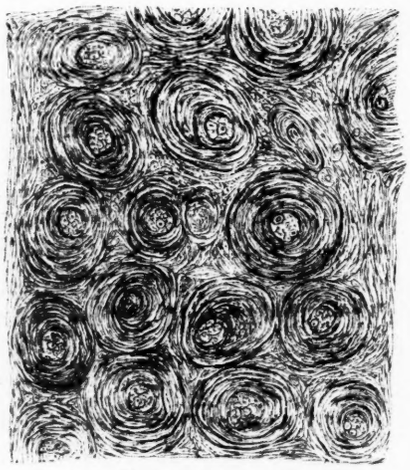

FIG. 5.—Structure of a psammoma.

CONCLUSION.

The study of these conditions, I venture to think, helps us to understand the nature of the psammoma. This tumour begins in an overgrown clump of choroid plexus, or arachnoid tufts. The epithelium capping the clumps is bathed in cerebro-spinal fluid, and becomes enclosed in a capsule of plastic exudate which stratifies and organizes. It is known that peritoneal exudation will encapsule sterile foreign bodies, ovarian papillomas, calcified epiploic appendices, intestinal and subserous uterine fibroids, and even a coagulated collection of sterile fluid or blood clot.

The villi of the arachnoid erode bone, as the Pacchionian foramina prove; chorionic villi, normal and abnormal, can penetrate the walls of the uterus, and ovarian papillomas in a favouring environment erode bone.

Surely this is sufficient evidence to justify the removal of psammomas from the miscellaneous group at present labelled endotheliomas.

THE TREATMENT OF GASTRIC ULCER.*

BY

SIR WILLIAM HALE-WHITE, K.B.E., M.D.,

CONSULTING PHYSICIAN TO GUY'S HOSPITAL.

THE treatment of gastric ulcer labours under two great preliminary difficulties. The first is that it is often diagnosed as present when it is not. That this bears on treatment is shown by the very many gastro-enterostomies that have been performed for a supposed ulcer when none has existed; sometimes the gastro-enterostomy has had to be undone later.

Among the conditions the symptoms of which have often been erroneously ascribed to gastric ulcer is disease of the teeth and gums; cure of this may lead to the disappearance of symptoms thought to be due to a gastric ulcer. In the middle of the last century it was believed that young women suffered from haematemesis due to vicarious menstruation, and in one large textbook this was stated less than thirty years ago. When this belief was discarded, young women with dyspepsia and haematemesis were said to have a gastric ulcer, but gradually doubt was thrown on this view. Then, although these young women rarely died of their disease, a few deaths occurred, and no ulcer was discovered. Some surgeons opened the stomach for this bleeding and observed that the blood did not proceed from an ulcer but from a general oozing over a considerable area. To this condition the name "gastrostaxis"[1] has been given. It is commonest in young females, is occasionally seen in young men, and rarely kills. The opinion has been expressed that this condition is one of minute multiple ulcers, but there is evidence of its being a distinct clinical entity. Many cases of gastrostaxis are diagnosed as ulcer, and, as they almost always recover, the treatment of gastric ulcer may be thought to be more successful than it is.

There is no doubt that disease of the appendix, of the gall bladder, and even a stone in the kidney may cause symptoms that are set down erroneously to gastric ulcer. Duodenal ulcer, carcinoma of the stomach, and various functional dyspepsias may be mistaken for it. All these conditions lead to errors of diagnosis sufficiently often to make most opinions expressed as to the results of treatment of no value. Other diseases are occasionally confounded with gastric ulcer, but not frequently enough to invalidate our views as to treatment.

When we consider the individual symptoms of gastric ulcer we also find ourselves in difficulties. Haematemesis may be completely absent, even when the ulcer is large, and is frequently seen in other diseases. The same is true of occult

* Being the introductory remarks at a debate on the treatment of gastric ulcer at the Royal Society of Medicine, February 2nd, 1922.

blood. Some sufferers from ulcer never have pain, many only complain of it at long intervals. It is common enough in various other conditions. Vomiting is an inconstant symptom, indeed very frequent sickness is strongly against the presence of an ulcer. Neither deep nor superficial tenderness are reliable symptoms, and it is generally allowed that an examination of the gastric contents may be of no help. My object is not to imply that the diagnosis of gastric ulcer is impossible—indeed, a skilful clinician can often infer its presence pretty confidently—but to show that the conditions which may be mistaken for it are so numerous and common, and that its own symptoms are so variable, that most statistics as to the success or failure of medical treatment are quite untrustworthy.

Examination by the *x* rays will often reveal an ulcer itself, it will also show the spasm of the gastric muscle (incisura) opposite to it. By this means we may obtain also further indications of the presence of an ulcer, such as hour-glass spasm, diffuse spastic distortion and delay in emptying from pyloric spasm, organic hour-glass stomach from cicatrization of an ulcer, and increased peristalsis from organic pyloric stenosis. Many radiologists supply us with beautiful pictures that are invaluable, but those produced by some are of little use. It may be that an ulcer although present is not demonstrated by the *x* rays, but that does not alter the fact that the only way in which we can be so sure of the existence of an ulcer that the case should be used in statistics employed to estimate the efficacy of medical treatment, is to see the ulcer with the *x* rays. It must be actually seen, for although the various manifestations of spasm are often highly suggestive of its presence, yet each of them may be evident when no ulcer exists. What is sorely needed is a series of cases showing on an *x* ray plate an ulcer, and examined again with the *x* rays six months later to see if the ulcer is healed.

Our second difficulty is concerned with causation. We knew how to treat a few diseases—for example, malaria and syphilis—before the cause was discovered, but generally treatment is imperfect until the cause is apparent. Clinical observations and experimental work indicate that a gastric ulcer is due to the local effect on the stomach of bacteria or toxins produced in another part of the body, and that when the gastric patch damaged by them has been formed the excavation of the ulcer is promoted and its healing retarded by the acidity of the gastric juice. It is probable that the incriminating factor is not always the same and that there are different varieties of ulcer due to different causes. Whether ulcers in human beings are formed by endogenous gastrotoxins is not known, but judging by Bolton's experiments it is possible. Still we do not yet know the cause of a gastric ulcer with anything like the certainty with which we are able to say that a diphtherial ulcer is caused by the diphtheria bacillus or a syphilitic ulcer by the *Spirochaeta pallida*. Putting aside traumatic ulcers and those due to irritant poisons, only twice have I been able to say, even after death, that I really knew the cause of an ulcer; once there were definite tubercles on its peritoneal covering and I saw the beautiful specimen exhibited here by Dr. McNee showing syphilitic spirochaetes in the wall of an ulcer. Nevertheless there is sufficient evidence for the view above mentioned for it to be strongly advisable, in every case of gastric ulcer, to remove any distant possible source of infection, be it in the teeth, appendix, or gall bladder, disease of any of these being commonly associated with gastric ulcer. More rarely such a source may be elsewhere—for example, tonsils or nose.

We are much encouraged in the treatment of ulcers of the stomach by the undoubted fact that they show a natural tendency to spontaneous cure. Those inadvertently caused by operations get well, those produced by experiments on animals heal under appropriate conditions, many seen in the *post-mortem* room show signs of healing, indeed they may be found quite healed; the fact that an ulcer by its cicatrization causes an hour-glass stomach or pyloric stenosis indicates that the attempt at cure has been made.

Perforation from an ulcer is much more common in women than in men; *post-mortem* evidence shows us that in women ulcers are more frequently multiple than in men. Therefore, it appears that we know of two distinct varieties, one multiple in many cases, a frequent cause of perforation and found chiefly in women, usually between the ages of 20 and 30; the other usually presenting itself clinically as a chronic ulcer, but not so often seen to perforate nor so frequently multiple, and found chiefly in men between the ages of 30 and 40. It is very likely that there are subdivisions of each variety depending upon the infective agent. The first is usually spoken of as an acute ulcer, the second as a chronic. This terminology is unfortunate and confusing; the words "acute" and "chronic" merely refer to time. It is believed that some in the group named chronic may begin as acute, but if there are two distinct groups with different characteristics, should the disease be of the first variety it cannot be changed to the second because it has lasted a long while.

Faber of Copenhagen[2] also describes two distinct diseases under the term ulcer of the stomach. The first, corresponding to acute ulcer, is ulcer of the corpus or "woman's ulcer"; it is commonest in young women, is usually situated on or near the lesser curvature; apart from perforation the symptoms are not severe and in many cases unrecognized, the ulcer getting well spontaneously. The second, corresponding to chronic, he calls juxtapyloric ulcer; it is commonest in men, its symptoms are frequently severe and often need surgical interference. But these names, although better than acute and chronic, are far from perfect, for the first variety is not confined to women nor the second to men, nor is the ulcer invariable in its situation in either. It would tend to clear thinking to abolish all these names, which are attempts at sharp cut descriptive distinctions which do not exist, and to call the first commonly spoken of as acute, ulcer A, and the second, ulcer B.

The first usually does not reveal itself on *x*-ray examination, and generally gives only slight symptoms; indeed, there may be none until perforation or severe haemorrhage takes place. Therefore it is often very difficult to diagnose, and especially so because, as we have already seen, the diagnosis of gastric ulcer has many pitfalls. Consequently it is impossible to gather accurate statistics as to the result of treatment. All we can say is that there are a number of patients, especially young women, who would a few years ago have been said to be suffering from a gastric ulcer, but some of whom we now believe owe their symptoms to other conditions already mentioned at the beginning of these remarks; others may have what is called an acute ulcer, a woman's ulcer, or ulcer A.

What shall we do with them? First search for a source of infection and, if possible, remove it; this may lead to the disappearance of the symptoms. If it does not, the outlook is still good, for the natural tendency of this class of ulcer is to heal completely. Put the patient to bed; rest in itself is good, and our diet will not contain enough calories for much work. The food must not be such—for example, meat or meat extractives—as will lead to the secretion of much acid; it must not be mechanically or chemically irritating; it must be capable of passing quickly and easily through the stomach; it must not stimulate this organ to excessive contraction, and must be sufficiently nutritious. I am accustomed to employ milk and raw egg, beaten up in it, in the proportion of two eggs to each pint of milk, giving 7½ fluid ounces of this every two hours during the sixteen hours the patient is awake, and an extra feed if she happens to wake in the night. It is almost always unnecessary to peptonize the milk, but this may be done if the patient does not mind the taste. This gives 1,600 calories a day. Unless she has a distaste for it, she should take some olive oil; she is much more likely to be able to do this if the very best quality is given, that, namely, which comes from the first expression; if necessary, it may be flavoured with a little black coffee; the patient may have it as often as she cares for it in the day, provided it is not nauseating. Its advantages are that it is a food, bland and unirritating. It restrains the secretion of acid and it is a mild aperient. One fluid ounce contains 560 calories. The total daily caloric value of our diet is now about 1,700 calories, which is enough for a patient lying in bed; she does not lose weight on it. Ulcers cannot be expected to heal if the body is under-nourished. Any dietary which leads to considerable loss of weight is wrong. In former days, when rectal feeding was common for gastric ulcer, many patients failed to get well because they were starved severely; it is impossible to prevent this on rectal feeding.

The chief drug should be an alkali to counteract the gastric acidity; sodium bicarbonate is frequently chosen with excellent results, but if it leads to distension lime water or magnesia may be substituted. Not less than 25 grains of bicarbonate three times a day should be given. Tincture of belladonna checks the secretion of acid and excess of gastric movement. A good mixture is sodium bicarbonate gr. 25, tincture of belladonna m 10, bismuth subcarbonate gr. 15, tragacanth powder q.s., with chloroform water to make

one fluid ounce; this may be given thrice daily. If an aperient is required, magnesia is the best. This treatment can generally be easily borne for six weeks; it is very simple. I have used it for many years, and patients do well on it. Several authors change the diet as the case progresses. There is no need for this; we cannot see how the cure is proceeding, and we are more likely to cure and prevent relapses in proportion as we are thorough in treatment. Many diets published are complicated; the simpler they are, the more likely are directions to be obeyed.

Cases are much too often treated in a half-hearted manner. If the doctor decides that the patient ought to be treated as though she had a gastric ulcer, let her be so treated, and not just sent away with a bottle of medicine. We have no means of estimating, in the class we are now considering, how much the stomach was ulcerated when the patient was first seen, nor how the cure is progressing, therefore I would suggest certainly not less than four weeks on the treatment—I always try to get six. Perhaps some of the mildest cases are thus treated too long, but it is better to do this than to treat some for too short a time, so that they fail to get well or relapse. The time spent in bed must vary with the case: four weeks may be desirable, but often it is well, earlier than this, to get the patient up in a chair for part of the day, out of doors if possible, provided she is warm. A little massage to the limbs helps to keep her in good condition. When the period on this diet has come to an end she may by degrees return to normal food, but this should always be plain, without much meat, and she should always masticate thoroughly. Unless perforation takes place these patients do not require the aid of a surgeon.

Although, thanks to *x* rays, chronic ulcer, or ulcer B, is much more easy of diagnosis, the treatment is more difficult and uncertain. We badly want, as I have already said, a series of cases with *x*-ray pictures before and after medical treatment. Should it be decided to try this we employ the same as that just given, but it will have to be more prolonged; it must last for many weeks.

This class of ulcer is more common in hospital than in private practice. Hospital patients cannot afford to be away from work long; surgery is easier in hospital than in private practice, a cure from surgery is quicker and probably more certain than that from medical treatment, and nowadays the risk to life from surgical treatment is slight; therefore surgical treatment, whilst often desirable anyhow, is especially so for hospital patients. Medical treatment should only be undertaken for those in whom the *x* rays do not indicate an ulcer—for they certainly fail to reveal it sometimes—or show that it is small. Its progress should be watched by *x*-ray examinations, say every six weeks; if it is not getting less the surgeon should be consulted, as he should if relapse has occurred after medical treatment, or this fails to benefit the symptoms.

In trying to decide when to adopt surgical treatment we must remember that even if the ulcer heals, pyloric stenosis, hour-glass stomach, or perigastric adhesions may follow, and all require surgery. Perforation, subphrenic abscess, fatal haemorrhage, or transition from a simple to a carcinomatous ulcer may occur at any time before complete healing, and when this has taken place dyspepsia may remain.

We shall hear from surgeons the best way of dealing with these ulcers. Gastro-enterostomy is by no means a universal panacea; it often fails to do any good. On the other hand, in suitable cases—for example, pyloric obstruction—the benefit is so great that if the patient is one for whom this operation is indicated it had better be done at once without waiting for medical treatment.

Perforation requires instant surgery. Every hour's delay greatly increases the risk of death. However severe the haemorrhage in the class of acute ulcer or ulcer A, no attempt should be made to stop it by surgery. Experience has shown that this increases very considerably the risk of death, for patients blanched by bleeding bear operations badly, and further, as the bleeding is often from many points, the surgeon cannot stop it; it can almost always be controlled by nature, aided by medical help. If in the second class haemorrhage is severe, operation should not be undertaken until the patient has recovered from its effects; then the question should be discussed whether it would be wiser for the surgeon to interfere with a view of preventing a second bleeding; certainly after the second he should operate to prevent a third. Even the rare event of death during a profuse haemorrhage should not make the physician blame himself for failing to ask surgical aid; had the patient been operated upon during the bleeding the chances of recovery would have been lessened.

The medical treatment for bleeding from a gastric ulcer of any sort is absolute rest in bed in a quiet room without visitors and enough morphine subcutaneously to keep the sufferer gently under its influence. If the symptoms show that the bleeding has been excessive, 2 grains of calcium chloride dissolved in water should be injected intramuscularly night and morning; this dose definitely increases the coagulability of the blood. No food or drink should be given by the mouth or otherwise for twenty-four hours. At the end of this time, dextrose in solution in tap water, 525 grains to the pint, may be given by the rectum, half a pint two or three times a day. But it is unlikely that all this can be retained and absorbed, so that the patient hardly gets more than 800 calories a day this way. Although this is by far the best rectal feed it is a starvation diet on which it is improbable that ulcers will heal; therefore, in two or three days at latest some milk in hourly or half-hourly feeds should be given by the mouth, and, as rapidly as possible, the patient should be got upon the diet already mentioned as suitable for ulcer of the stomach. I strongly suspect that, in the past, very many cases have been lost from too prolonged rectal feeding and consequent starvation; it must be remembered that these patients are often already under-nourished from severe dyspepsia at the time the bleeding occurs. Transfusion may be of great help, but, in the nature of things, it is unfortunately often impossible to carry it out at short notice.

Drugs given by the mouth are of very little value in arresting gastric bleeding; sometimes it has appeared that a drachm of liquor ferri perchloridi, with an equal amount of glycerin to facilitate swallowing, has stopped the haemorrhage, but as it is so nasty and may cause vomiting I have given up ordering it. During recovery iron is useful, but it should not be given as an acid preparation, nor in a form likely to cause indigestion. Reduced iron, the old-fashioned dialysed iron, or the saccharated carbonate may be prescribed. Levico water in doses of two fluid ounces suits some and the minute quantity of arsenic in it may be helpful.

The treatment of other results of gastric ulcer, such as organic hour-glass stomach, pyloric obstruction, subphrenic abscess, and perigastric adhesions, is entirely surgical. Of these, the treatment of the last is likely to be disappointing, for, although in some cases surgery is brilliantly successful, in others either the adhesions are such that the surgeon cannot give much relief or the patient, usually a woman, has become from long painful suffering such an introspective invalid that her symptoms continue after operation, and she wanders from operation to operation, each of which she welcomes. We should, before opening the abdomen of a woman for chronic disease, remember that a certain number drift into this very unsatisfactory class. I remember one in whom operation led to complete relief of her pain due to adhesions so long as she was in the hospital: when she returned to sympathetic friends the pain came back; we readmitted her to hospital and it soon disappeared. It is not a bad aphorism to say that we should think twice as long before opening the abdomen of a woman for chronic disease as we should before opening that of a man.

Opinions differ widely as to the frequency of syphilitic gastric ulcer; in this country it is regarded as very rare. If in a case of gastric ulcer there is evidence of syphilis, anti-syphilitic treatment should be given, but surgery may be required for some of the results of the ulcer, such as hour-glass contraction. Whether the treatment by intramuscular injection of calcium salts combined with giving parathyroid by the mouth, as suggested by Vines, will prove of benefit time will show. Here also it will be well to watch the progress by occasional *x*-ray examination of the ulcer.

To sum up. Statistics as to the result of medical treatment are at present valueless. Unless it perforates, the acute ulcer or ulcer A requires only medical treatment. Very many of the other class will derive most benefit from surgery, but ulcers should not be operated on when bleeding.

REFERENCES.
[1] *Lancet*, November 3rd, 1906. [2] Ibid., January 14th, 1922.

THE Academy of Military Medicine at Vienna has been converted into a museum for the history of medicine under the direction of Professor Max Neuburger.

THE fourth Italian Congress of Radiology will take place in Bologna on May 9th, 10th, 11th, 1922, at the Orthopaedical Institute Rizzoli, under the presidency of Professor Aristide Busi. In connexion with the Congress an exhibition of radiological apparatus, both Italian and foreign, will be held. Further information may be obtained from the Secretary of the Congress, Dr. Alberto Possati, Villa Verde, Bologna.

GASTRIC SYPHILIS.*

BY

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GASTRIC SYPHILIS was described twenty-five years ago by Lancereaux in his *Traité de Syphilis*, and references to it in Continental medical periodicals and textbooks are not infrequent. In medical literature in the English language mention of such a condition has been rare, one very excellent textbook dismissing it in exactly seven words. Recently, however, reports of cases are becoming more frequent, especially from America, and we are driven to one of two conclusions—either that this manifestation of syphilis is becoming more common, or that we are awaking to the fact of the existence of such a pathological entity. My belief is that, while by no means common, it is not the excessive rarity it is commonly assumed to be. There may be reasons for this belief: first, there is the ethnic one, my experience having been wholly among Asiatics; in them syphilis, especially untreated syphilis, is not only more common, but presents other pathological pictures than in Europeans; and, secondly, because my introduction to the disease was of such a nature as to leave in my mind no trace of doubt as to its existence, and to induce an attitude of mind favourable to its discovery when present.

My first case occurred thirty years ago, when I was asked by the medical attendant of a patient to see him in consultation; a diagnosis of pyloric cancer had been made.

CASE I.

The patient was a Straits-born Chinaman, 45 years of age, in easy circumstances. I had frequently met him, and recollected him as a well-built man inclined to stoutness although of active habits. When I saw him I had difficulty in recognizing him. He was emaciated to a degree, with dry wrinkled skin of that lemon tint which we associate with cachexia in Chinese. His features were sharpened, and he had the "facies" of serious illness. His complaint was all of his stomach. About five months previously he entirely lost his appetite, and had vague uneasiness in the region of the stomach. If he forced himself to eat his discomfort was often so great that he had to excite vomiting to obtain relief. Soon the vomiting became spontaneous; lately he had vomited only once or twice in the twenty-four hours, bringing up a large quantity. He complained also greatly of thirst.

Examination in a good light showed a considerable bulging of the abdomen, and in its upper part waves of peristalsis were visible through the parchment-like abdominal walls, but in what direction these were travelling I have no note. By palpation and percussion a much dilated stomach was mapped out, the greater curvature being well below the umbilicus when in the horizontal position and sinking into the pelvis when he sat up. An attempt to elicit a "splash" was too much for the patient, and he was sick, bringing up a large quantity of greyish sour-smelling liquid. After he had rallied a little it was possible to make a much better examination, and a firm mass was felt lying mostly under though somewhat to the outer edge of the right rectus, about the level of the umbilicus. This mass had a considerable degree of movement. The liver and spleen were both palpable. I concurred in the diagnosis already made.

With a view to lessening his discomfort, the stomach was washed out and half a grain of calomel was given every hour for six hours, the idea being to lessen fermentation. He was allowed clear soups only, with sips of hot water, and the calomel was to be continued in doses of one-sixth of a grain every two hours. Ten days later I was asked to see him again, as such changes had taken place as to require a revision of our diagnosis. Since the washing out and dosage with calomel the vomiting had stopped; he seemed to digest what was given him, his appetite was coming back, and there was difficulty in keeping him on the diet prescribed. All this may occur in a case of pyloric cancer, as the result of local treatment at first, but the surprising factor in this case was that the tumour was rapidly disappearing.

On my second visit I found the patient a much altered man. Although still very emaciated, he looked much better, had lost the "facies," there was no bulging in the abdomen, it was, in fact, scaphoid, and it was easy to feel a well-defined thickening, slightly higher and a little more to the right than the position previously occupied by the tumour. The liver and spleen were still enlarged; there was some mercurial stomatitis, but not excessive. To put it briefly, the antisyphilitic treatment was continued, the diet gradually increased, and in a little over four months he had regained his lost weight and was in robust health. He lived for twenty-five years after that, a life saved by a mere accident, and a standing reminder of our limitations. There was no history of syphilis obtainable.

The patient I now show is peculiar in that he is the only European in my series. He came into my hands eighteen months ago, his case having been diagnosed by one medical man as cancer of the stomach, and by another as cancer of the head of the pancreas.

CASE II.

He is not very robust now, but at the time of which I speak he was little more than a skeleton. A peaked swelling stood up in the centre of an area bounded above by the ensiform cartilage, below by the umbilicus, and laterally by the costal margins—an inch below the centre of the epigastrium. His hollow abdomen tended to exaggerate the prominence of the swelling, but viewed horizontally it stood higher than the level of the sternum. It moved with deep inspiration, could be freely palpated without pain, and it lacked the stony hardness which we associate with malignancy. He had been living on soups and milk for months. There was no dilatation of the stomach, no jaundice, and no spinal symptoms, but there was enlargement of both the liver and spleen, which his emaciated state rendered easily palpable. He had a history of syphilis, acquired in South Africa twelve years before and practically untreated, and stigmata of the disease were many. He was given 1 gr. doses of the yellow iodide of mercury three times daily until signs of saturation appeared, and then an intravenous injection of 0.6 gram novarsenobenzol. I left for Australia soon after, enjoining him to have a thorough treatment, but that is all he has had. The improvement worked by even such limited dosage is very great.

There are other than tumour manifestations caused by syphilis, and the case I have chosen to represent a second class is that of a Japanese woman from Taipeng.

CASE III.

Her history was that three months before she lost her appetite, but could still digest soft foods. That ability was early lost and she began to vomit. Gradually a new symptom was added—pain, which was nearly constant, not much aggravated by eating, but very much so by vomiting. From dread of vomiting, and on medical advice, her diet had been restricted to milk, and even that had latterly been returned. In the vomited matter she had lately noticed small clots of blood, and, if the effort had been severe, bright red blood was brought up towards the end of vomiting.

Signs of syphilis were many, and the only objective local sign was a thickening in the epigastrium, a little to the left of the middle line, very tender on manipulation, and there was enlargement of the liver. She was not pregnant. She was much exhausted, and there was a strong acetone smell in the breath. The treatment had been very careful, and much resource had been shown in it.

For twenty-four hours she had nothing but full doses of sodium bicarbonate in hot water, most of which she retained, and then an intravenous injection of "914." The vomiting ceased at once, and after her dread of vomiting had gone she began to take food in quantity. After a course of combined mercury and "914" she returned home cured.

As typical of a third, and by far the most numerous, class of case I have taken that of a Chinese merchant, 53 years of age, a man much above the average both physically and mentally.

CASE IV.

He had contracted syphilis twenty-two years previously, for which he had had no treatment. I had seen him frequently, his usual complaint being a sore mouth, caused by mucous patches, irritated by excessive cigar smoking. A few weeks on iodide and mercury perchloride and the application to the patches of a chromic acid paint cleared this up, and he stopped treatment as soon as comfort was attained. On this occasion, however, it was not the tongue, all his complaint was of his stomach. For over a month he had been losing all desire for food and had trouble in digesting what little he took. His troubles were worst at night so that he had been taking no food after 2 p.m., but even then he had sometimes to induce vomiting before he could sleep, and the vomit was the food he had taken early in the day, little changed.

Examination of the abdomen was not satisfactory as he was rather stout with a thick abdominal wall, but enlargement of both liver and spleen could be made out. Deep pressure in the epigastrium elicited only slight tenderness. The tongue was remarkably clean though still showing thin mucous patches, and the mouth was, generally, in good condition. The urine was free from albumin and sugar, but there was a pronounced indican reaction. He was treated for dyspepsia and both medicines and diet frequently changed because of the entire lack of success with any.

After three weeks of this he was decidedly worse, had lost much weight, and had developed a slight temperature. Anorexia was absolute, but his thirst was great. A trace of sugar was found in the urine and malarial parasites were found in the blood, probably accounting for the temperature. A better examination of the abdomen could now be made, but it resulted in nothing more than the previous one, but the skin had assumed the dry inelastic feel and lemon tint of cachexia. It was while making this examination that it flashed into my mind that I was dealing with a case of syphilis of the stomach, and acting on this, I discarded all other treatment and gave an intravenous injection of novarsenobenzol. The result was almost theatrical, and in a day or two he was able to eat with relish. A course of treatment soon restored him to his normal condition, minus the sore tongue.

You will probably agree with the statement that in its power of mimesis of other diseases syphilis runs hysteria a close second, for however much my description of the cases

* Read before the Malaya Branch, British Medical Association.

may have fallen short, I can assure you that clinically they were very presentable pictures of three distinct gastric conditions—malignant tumour, gastric ulcer, and a subacute gastritis. I was fortunate in getting histories of infection in the majority of my cases—I say fortunate, as you all know the difficulty of obtaining a medical history of any kind from a native, to whom the acquisition of a venereal disease is a mere incident. From the histories and from a consideration of all the collateral circumstances in those from whom no history could be obtained, I was led to the conclusion that all of them were the result of the acquired disease. The youngest, and also the earliest after the date of infection, was a female, 28 years of age, with a clear history of infection six years previously.

The comparative rarity of the definite tumour formation may be judged when I say that in thirty-five years I have encountered it only seven times; all were males, and only one European. In three the symptoms of obstruction with dilatation of the stomach were very definite; in one, the European, there were signs of a partial obstruction, and in the remaining three there were no signs of obstruction whatever. In the European the swelling lay in the middle line, and yet it produced some obstruction as only fluids could pass. This can be explained only on the hypothesis that, by its size, it caused a distortion of the gastric planes and thus obstruction. In the other non-dilated cases the site of the tumour was to the right of the middle line, so that, of the seven cases, six were in the pyloric region.

I am unable to add anything to our knowledge of the pathology of these conditions as I have had no fatal case, but writers on this subject are fairly well agreed as to the changes to be found. These are two—syphilitic endarteritis and gummatous formations. Of the latter three forms are described—small discrete gummata scattered all over the mucous membrane, flat diffuse gummata, and gummatous tumour. I do not think there is much room for doubt that these tumour cases were of the latter variety. Although I have had no death I believe myself justified in stating that the course of these cases would differ little from that of the most acute type of malignant disease. In none, excepting the European, did the history of gastric trouble extend beyond six months. The condition of the dilated cases was grave enough to warrant a belief that they were within measurable distance of their end, and, what with the absolute anorexia, the abeyance of gastric function and the cachexia, I do not think that the course of the non-dilated cases would have been much longer than the dilated. The European dated the beginning of his symptoms back twelve months. Early diagnosis is therefore a desideratum, and to that end it would be a prudent measure, having diagnosed an organic lesion of the stomach, either to confirm or eliminate syphilis by a Wassermann or Noguchi test.

The only symptom which might give a pointer is the nature of the pain. While there do occur cases of malignant disease of the stomach which throughout their course are "silent," they are the exception. Pain in malignant disease is usually a prominent symptom, occurring erratically, radiating widely, always severe, often indeed agonizing, disappearing completely for a time. Pain in gastric syphilis is never at any time pronounced, but it is always there, dull and constant, sometimes better, sometimes worse, especially at night, and limited to a zone extending right round the body a little below the level of the diaphragm. There is of course always the possibility of such cases merging into malignancy, as old syphilitic lesions do in other parts of the body, and it would not surprise me if the case shown to-night should, in its half-treated condition, follow that course.

The second group of cases, those mimetic of gastric ulcer, are not as a rule difficult of diagnosis. Though vomiting is a symptom, the excessive vomiting in the illustrative case is unusual, and unless of spinal origin not easily explained. The symptoms common to all were thickening, sometimes almost amounting to tumour formation, in the epigastrium, tenderness on palpation, vomiting, and the presence of blood in the vomited matter. Taking the three cardinal symptoms of gastric ulcer, pain, vomiting, and haemorrhage, and discussing them seriatim, it is possible to go some distance towards establishing a diagnosis. Pain in gastric ulcer is brought on, or much aggravated by, eating, and is relieved to a corresponding extent by vomiting. It is usually located in one spot, a "point of pain," is intense, and there is generally a point of referred pain, usually in the back. In ulcerated gumma of the stomach, which I take to be the pathological condition, there is a constant substratum of pain, not much aggravated by eating, but greatly so by the effort of vomiting, radiating laterally, and forming a girdle of pain which, as usual, is worse at night. Vomiting is common to both conditions.

Haemorrhage in gastric ulcer is usually copious, coffee-ground, or bright red, according to its time of retention. In gummatous ulcer the blood comes up only with food, is in small clots, and bright red only at the end of a severe effort of vomiting. There is a possibility of a true peptic ulcer developing in a stomach which is the site of syphilitic endarteritis.

The third class—those resembling subacute gastric catarrh—are more common than is generally assumed, at least among Asiatics, and they range from those having only subjective symptoms to those in whom the local condition verges on tumour formation.

Some assistance in diagnosis may be had from test meals, as all the cases in which it was given had a pronounced hypochlorhydria. They are too few to generalize upon, but it is significant that the condition was the same in all.

To summarize briefly, there are two symptoms and three signs. The symptoms are, first, anorexia—I know of no condition in which it is so absolute, excepting in some early cases of malignant disease—and second, the nature of the pain. The signs are, first, enlargement of the liver (and occasionally also of the spleen), with smooth outline, present in three-fourths of all cases; secondly, rapid development of cachexia; and thirdly, stigmata of syphilis.

The real test is the empiric, the therapeutic, and that may be applied both from its negative and positive aspects. It seems to be immaterial what care is expended or with what ingenuity drugs and diets are tried and changed, the result is *nil*. On the other hand, when specific treatment is begun, the change is immediate, often dramatic. In the pre-salvarsan days, from which period the most of my cases are taken, the prescription of choice was calomel ½ grain, with sodium bicarbonate 10 grains, and heavy magnesium carbonate 10 grains, given thrice daily with hot water on an empty stomach, and continued until signs of mercurial saturation appeared. After the first day or two, as soon as mercury began to be absorbed, improvement began and was generally very rapid. There was always the possibility that local action shared in bringing about the improvement, but now that is eliminated and negatived, as intravenous injection of novarsenobenzol acts on the stomach condition immediately.

SOME PRINCIPLES OF AFTER-TREATMENT IN ACUTE ABDOMINAL DISEASE.*

BY

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THIS paper is founded on the results of trying the more modern methods of after-treatment in a series of just under 300 cases of acute abdominal disorders, on which I have operated in the last two years. During the same period I had the opportunity of observing many cases operated on by others, and, since they were seen, it is impossible to avoid taking them into consideration.

An attempt has been made to follow the results of *post-mortem* examinations and the appearances observed at second operations, and to bring these findings to bear on technique and on after-treatment.

In surgery some older methods are being abandoned for those we believe to be better; but in nearly all conditions it is being increasingly recognized that the operation is but a part of the treatment. It is also becoming manifest that, apart from the particular manipulation called the operation, the great therapeutic agent is rest. It is astounding to realize how little we have advanced in basic principles of treatment since the time of Hilton. With all our elaboration of technique, the almost universal objective of surgery is to provide the patient with an easier task in overcoming the damaging agent.

At the conclusion of an emergency laparotomy the patient is left with a double task. He has to repair the ravages of his disease, and to overcome those portions of the damaging agent which the surgeon has left behind. He has also to repair the injuries inflicted by the surgeon, who, unlike the

* Paper read before the Kent Branch, British Medical Association, at Bromley, December 8th, 1921.

cells and fluids of the body, cannot accomplish his task without inflicting damage.

The dual repair involves many processes—excretion of toxic substances, manufacture of antibodies, multiplication and migration of cells, besides the patient's essential metabolism. Practically the only way in which we can hope to influence any of these processes is by securing for the patient physiological rest. The medical attendant, therefore, when all goes well, holds a purely watching brief. He must be prepared to act solely as a trained observer. He must be familiar with the living pathology of acute abdominal disorders, and must have a constant mental picture of what is going on in "this abdomen at this time." He must be able to diagnose at the earliest possible moment any variation from the normal convalescence. His is the responsible—and often thankless—task of deciding when a surgeon is to be called in again. He has the difficult task of doing nothing amidst the sometimes silent opposition of nurses and relatives. The treatment after operation for an acute abdominal condition is, therefore, rest; but there are certain indications for a departure from this waiting attitude.

Shock and Toxaemia.

Without discussing the genesis of shock in detail, it may safely be said that it is produced by one or more of the following factors, and that, little as we knew about it seven years ago, further knowledge makes its explanation more difficult:

1. Trauma and exposure, especially of abdominal viscera.
2. Mental and emotional impressions; pain or unfelt painful stimuli.
3. Loss of fluid from the body by haemorrhage, vomiting, or diarrhoea.
4. Loss of heat.
5. The absorption of certain poisonous substances, toxins—bacterial and non-bacterial—for example, histamine.

Its salient features are mental torpor, "pinched" facies, cold extremities, usually, but not invariably, a rapid pulse rate, and quite late a falling blood pressure. Shock is usually most severe some hours after the damage is accomplished. A slow pulse is not unusual in a patient otherwise in a state of shock. It is usual to find a patient whose peptic ulcer has perforated with a slow, full pulse, 60 to 70, yet he is cold, clammy, and evidently suffering from severe shock. One would feel more confidence in making the diagnosis from the feel and appearance than from a consideration of the chart. Patients whose blood pressure falls steadily during an operation seem to have but small chance of surviving.

Treatment.

In the absence of exact knowledge of its pathology we are compelled to treat symptoms. Thanks to Crile, we know how we may prevent severe shock. These methods are based on the elimination of nocuous stimuli, maintenance of body heat, and replacement of lost fluid. These, too, are our sheet anchors after shock has been produced. What the patient requires is: *Rest*, mental, physical, and physiological. We can give him this with an adequate dose of morphine. Do not let us withhold this drug, and if it is to be of any use it must be given in full dose. Let the patient's rest and the state of his pupils be the guide to dosage. *Warmth.* The best way is by means of the electric hot-air bath; where this is not available, hot blankets and bottles. The supply of heat should be continued up to but not quite as far as the sweating point. *Fluid.* This serves three purposes; (1) It maintains the volume of the blood; (2) it can supply heat; (3) it diminishes thirst and provides a vehicle for the excretion of toxins. We can give whole blood if a suitable donor is available; it must be given intravenously, and the citrate method or that by means of Kimpton's tube are the most convenient methods. We may give gum solutions (Bayliss), which should be given intravenously. The effect of these is more sustained than the next. We can give various isotonic solutions, of which I think glucose (1 oz. to a pint) is the most satisfactory. Intravenous, subcutaneous, rectal and oral methods are available. If the patient can take fluid by the mouth—and here lies the great virtue of gas and oxygen anaesthesia—it seems infinitely more pleasant and just as satisfactory to give fluid in that way.

The Question of Stimulation.

Drugs such as strychnine, digitalin, ergot, adrenaline, and pituitary extract may all have a pressor effect on the vasomotor system. All available evidence goes to show that this effect is transitory, and is succeeded by a fall to a lower blood pressure than existed before the administration. It is therefore inadvisable to use them in the treatment of shock.

Posture.

Raising the foot of the bed and bandaging the extremities should aid the circulation of blood in the vital centres. Practically the position may do good in severe shock and can do no harm. It is, however, very rare for a patient to need more than rest as supplied by morphine, and warmth as supplied by hot bottles.

Toxaemia.

In the absence of exact knowledge of the chemistry of the circulating toxins we know of no drug or combination of drugs which can deal with the complex chemical poisons we know toxins to be. It is the patient who must elaborate the drugs which are required. We think that it is the spleen, the liver, and the endocrine system which are concerned with antitoxin formation; but we cannot give any orders to these viscera. What we can do is purely passive. We can supply rest. We can, by reducing protein intake, reduce the exogenous urea formation—again giving rest. We can reduce the work thrown on the excretory organs. We can supply a vehicle for excretion. The indications are therefore to abolish protein intake, to allow rest and sleep, and to give fluid.

General Management of the Case.

All the indications we have so far examined demand rest. Rest and sleep are essentials, and for their attainment comfort is necessary. In many cases we cannot secure comfort without giving morphine, and the indications and contraindications for its use must be discussed. Morphine adds a burden to the excretory organs and lowers their efficiency, it masks symptoms and signs which should be apparent, it makes for diminished intestinal movement, and is said to increase intestinal distension. On the other hand, morphine is very often the only drug which will secure rest and sleep, and the patient who does not rest will very likely die.

The first objection is real and must be faced. It is a disadvantage which I believe is outweighed by its advantages. It is a disadvantage that might be equally urged against the use of anaesthetics. The second objection is also true, and offers the sole contraindication. We must not give morphine while trying to decide for or against a second operation, but the decision should be made quickly. The third objection contains a truth and also a fallacy; morphine diminishes intestinal movements, but I hope to show that this is desirable. It is in cases which present complications, such as obstruction, adhesions, peritonitis, and the like, that the repeated administration of morphine is called for. These conditions will produce distension without morphine. In a straightforward case morphine is not required after the first twenty-four hours. In the first hours a night's sleep works a startling change. Morphine is, nevertheless, indicated if the patient be restless and in pain after twenty-four hours so long as we are confident that further operation is not indicated.

The next thing that makes for comfort is the unrestricted intake of fluid by the mouth. Quantity need never be restricted, but it is wise to let each drink be small until we are sure that vomiting is not being induced by it.

The avoidance of all unnecessary interference with the patient makes for comfort. Enemas, feeding, and injections are particularly disturbing if repeated. Sometimes patients are almost treated to death. As soon as possible let the patient be nursed in the position of greatest comfort. There should be as few dressings as possible, tubes should be removed early, and syringing and all fiddling with the wound avoided. After an operation for appendicitis patients do best in Fowler's position, and on the right side, but they can safely be got out of this somewhat uncomfortable position after forty-eight hours. Good nursing as regards washing, oral cleanliness, and arrangement of bedding and bed rests, adds enormously to comfort. When there is vomiting after the first twenty-four hours the stomach tube is the best way of stopping it; it is uncomfortable, and, if the patient will not co-operate, painful; but once a patient has experienced the extraordinary relief of having an empty stomach he will desire its repetition. It is quite frequently a life-saving measure.

Dressings.

A clean case wants dressing when the stitches come out or when for any reason it is desirable to inspect the abdomen.

A suppurating case wants dressing only as often as pus soaks through to the outside of the dressing. Fomentations should be avoided as far as possible. They are apt not to be sterile, and are indicated only where there is a spreading cellulitis of the abdominal wall which we desire to localize as an abscess which can be drained.

Drainage.

In this connexion facts oppose much that is traditional. It is possible to drain the whole peritoneum for but a short time —about twenty-four hours. Experimental work and numerous necropsies show that any foreign body, such as a drainage tube, is isolated by plastic lymph adhesions within a very few hours. This statement is true for a dying individual; it is likely to be even more true for one who is going to survive his infection.

The foreign body, having been shut off by the above-mentioned layer of lymph, continues to drain the sinus it has produced for itself, and to drain this sinus only (Fig. 1). The discharge soon ceases once the offending tube is removed. Sometimes in removing the tube a portion of the barrier is torn; a gush of pus is the result (Fig. 1). The drainage tube is therefore useless after the first twenty-four hours (approximately). It is also dangerous; I refer only to that portion which projects into the peritoneum; the barrier of lymph is invaded by cells which convert it into granulation tissue. The granulation tissue becomes young fibrous tissue; eventually it contracts and becomes mature fibrous tissue. I have thus traced the genealogy of a fibrous band of adhesions. The longer the tube is left, the more complete is the evolution towards fibrous tissue and the denser the resulting band. In peritonitis the evolution towards true fibrous tissue (permanent) seems to have three common sites where it progresses to completion. These are: the vicinity of drainage tubes, of a residual abscess, or of traumatism or blood clot—for example, scar of uterine stump. I will quote three illustrative cases.

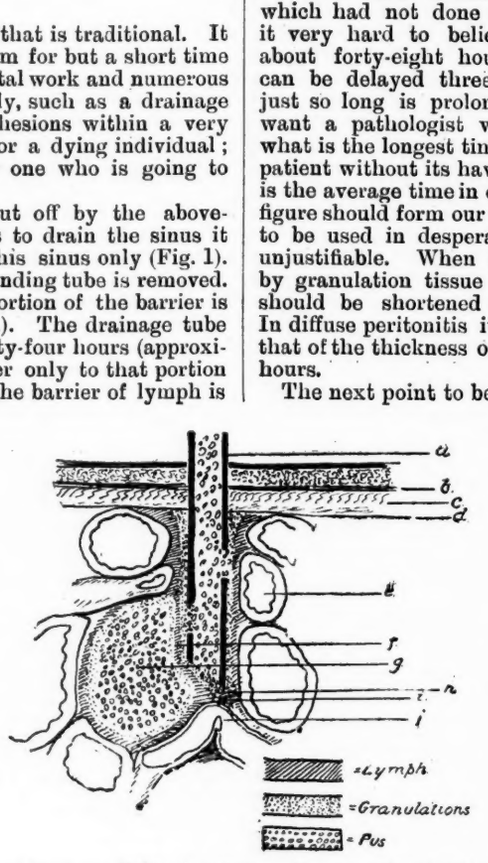

FIG. 1.—*a*, Tube; *b*, aponeurosis; *c*, muscle; *d*, peritoneum; *e*, gut in section; *f*, barrier of lymph separating abscess from tube; *g*, abscess; *h*, granulations adherent to *i*, damaged gut liable to be obstructed as *h* contracts.

CASE I: *Perforated Duodenal Ulcer.*—S. K., male, 31. Operation twelve hours after perforation. Peritoneum flooded with bile-stained glairy fluid. Perforation closed, and a posterior no-loop gastro-enterostomy was done. Drainage tube through a stab wound above the pubes. The operation took thirty-five minutes, and he left the theatre in good condition. The tube was left in five days. Ten days after operation he developed obstruction. At his second laparotomy the peritoneum was clear of adhesions except in the track of the drainage tube. Here there was a dense, well defined band adherent to and obstructing the small gut. This was divided, and the wound closed. He died twenty-four hours later, and necropsy was refused.

CASE II: *Perforated Duodenal Ulcer.*—F. W. B., male, 40. Operation four days after perforation, which was minute "leaking." There was marked lymph formation over the whole of the right flank. Perforation closed, and a posterior gastro-enterostomy done. Drained, two tubes. He made a good recovery, and was discharged from hospital. Three months later he was readmitted with intestinal obstruction of four days' standing. At operation there were dense adhesions both where the tubes had been and to the abdominal scar, none elsewhere. He died the same night. None of my other cases of perforated peptic ulcers (16) have shown evidence of the formation of adhesions. They have either been closed without drainage or the tubes have been removed within forty-eight hours.

CASE III: *Acute Appendicitis, Diffuse Peritonitis; Operation, Appendicectomy.*—N. B. S., female, 5. Drainage through a suprapubic stab. Tube out in forty-eight hours. Tenth day a second laparotomy on account of intestinal obstruction. Small gut greatly distended and adherent to a small residual abscess on the upper surface of the sigmoid mesentery—remote from the situation of the drainage tube. The rest of the peritoneum was clear of adhesions as far as was seen. Gut was freed and oversewn and the abscess drained for forty-eight hours. She made an uninterrupted recovery.

These three cases illustrate what I have found to be the common sites at which dense adhesions are liable to form. They point strongly to the danger of prolonged drainage.

The essential difference between an abscess cavity in the peritoneal cavity and a generalized peritonitis is that the latter has the power of isolating a foreign body by adhesions. An abscess cavity is lined by granulation tissue which has not got this power. The whole peritoneum, or a really large part of it, cannot become an abscess cavity; the patient dies long before this point is reached.

The whole matter of length of drainage comes therefore to the question how long an inflamed peritoneum can delay its power of isolating a foreign body. The healthy peritoneum isolates the least irritating of foreign bodies in about twelve hours or less. I have never seen a diseased peritoneum which had not done so in twenty-four hours, and I find it very hard to believe that it can be delayed beyond about forty-eight hours. If you believe that this power can be delayed three or four days or longer, then for just so long is prolonged drainage defensible. We really want a pathologist with vast experience to tell us, first, what is the longest time he has seen a tube left in a living patient without its having been shut off, and secondly, what is the average time in cases of diffuse peritonitis. The latter figure should form our routine, the former our maximum, only to be used in desperate cases. To drain longer would be unjustifiable. When there is a localized abscess lined by granulation tissue the case is different; here the tube should be shortened gradually as the abscess collapses. In diffuse peritonitis it should be cut to a length, which is that of the thickness of the abdominal wall, after forty-eight hours.

The next point to be considered turns on the frequency of residual abscesses where drainage is curtailed as to time. It is difficult to determine from so small a number of cases. My own impression from my own and from reading the notes of and seeing other cases treated by more prolonged drainage, is that they are not more frequent; drainage, however prolonged, does not eliminate the risk of residual abscess. The residual abscess is so often remote from where the tube has been that it is difficult to see how any drainage short of "kippering" the patient could eliminate it. The usual fate of a residual abscess is to resolve without interference by the surgeon. The history of appendix abscess as well as recent experience and present doctrine all combine to prove this. It was formerly the fashion to wait until an appendix abscess resolved. Quite 60 per cent. did resolve. After a period of operating on everything it is now recognized almost universally as good practice to wait under certain defined conditions—namely, a history of longer than four days, an improving patient, a palpable decreasing tumour, and when immediate operation can be performed should the improvement not be maintained. This is most emphatically not a doctrine of waiting in the early stages of an attack of appendicitis. Most of the residual abscesses which occur after operation will disappear if the patient is watched under conditions of semi-starvation and rigid non-interference by purges, etc.; but if increasing or if reasonable suspicion exists that it is causing the formation of obstructing bands, it should be appropriately drained.

The foregoing remarks apply with equal force to the maintenance of the Fowler position, except that here it is only a comfortless position and not a dangerous complication which is at stake. Any peritoneal exudate which has not gravitated to the pelvis in forty-eight hours must be dealt with *in situ* by the peritoneum. Fortunately for the surgeon, in the majority of cases the peritoneum is capable of dealing effectively with what he leaves behind.

Acute Dilatation of Stomach.

The frequency of this condition is difficult to determine. Cases which reach the stage of exhibiting a complete clinical picture usually die whatever is done for them. On the other hand, we are hardly justified in claiming that every case whose vomiting is cured by gastric lavage is a case of acute dilatation. One is almost justified in saying that the surgeon who never sees a case treats it most efficiently. Pathologically it is a paralytic dilatation of the stomach most commonly occurring after abdominal operations, but sometimes when there is no other disease in the abdomen. Whether a mechanical factor exists after the dilatation has commenced

is a matter of little but academic interest. Clinically, there are repeated large vomits and belchings of wind, relieved temporarily by the passage of a stomach tube, marked distension of the upper abdomen, chiefly to the left of the mid line, and great prostration.

Treatment.—The important thing is that further operation on the stomach is almost uniformly fatal. Repeated gastric lavage, combined with the prone position over a pillow with the head low, saves a few cases. If anaesthetic vomiting persists for more than twenty-four hours, there is a grave suspicion that this condition is commencing, and if there is distension, eructations, and a rapid pulse, no time should be wasted in conjecture. If a stomach tube be passed it will often be found that a patient who is apparently emptying his own stomach every few minutes still has a reserve of 30 to 40 oz. of filthy fluid in it. The stomach should be gently washed out again and again with sodium bicarbonate (60 grains to the pint) through a large funnel, until the wash is clear. If the patient is greatly relieved this should be repeated every four or six hours, until the stomach contents fall to less than 4 oz. on passing the tube. All feeding by the mouth should be stopped and rectal or subcutaneous salines given. The passage of a stomach tube sounds and looks a brutal procedure; but the relief is so great that patients will often demand its repetition. Provided that the tube is soft its passage is safe where a gastro-enterostomy has been done—far safer, in fact, than leaving a dilated stomach.

Ileus Paralyticus.

This is a paralysis of the motor mechanism of the gut which may be due to (*a*) toxaemia, (*b*) over distension, (*c*) trauma and exposure. Most textbook descriptions advise calomel, eserine, pituitrin and saline purges, etc.; croton oil is not often advocated. Ileostomy and caecostomy are also advised.

First, ileus, apart from peritonitis, is rarely found either at second operations or *post mortem*. This means either that it is a rare condition, or that cases of it usually recover; both statements are probably true. The common finding, both at operation and *post mortem*, is a widespread plastic peritonitis, which is a mechanical bar to peristalsis; not that there is localized obstruction complete at any one point and to be relieved by operation, but, as it were, a brake applied over a considerable length of intestine. Cases diagnosed as ileus are therefore more truly described as post-operative peritonitis. All the cases of paralytic distension I have had the opportunity of accurately observing have been in association with peritonitis, usually primary, sometimes secondary to obstruction. When the condition of the small gut is observed during operations for appendicitis, it is in the immediate vicinity of the iliac fossa that the gut is most distended. From a consideration of the usual lie of the gut in the abdomen this means the lower third of the small intestine (Fig. 2). It is justifiable to assume that the gut dilates because it is inflamed, and that the dilated condition is the resting condition in response to inflammation. The pathological picture with which we have to deal in an ordinary case of appendicitis is therefore that the lowest coils of the ileum are inflamed and distended, and the gut progressively approaches the normal as the stomach is approached (Fig. 3). It is rational to attempt to empty this, but normally, and in fact nearly always, it empties itself. The precise action of the various methods we have at our disposal shows that the difficulties are greater than in dilatedstomach.

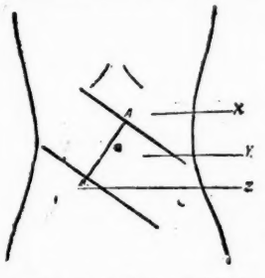

FIG. 2.—A, B, Line of mesentery; X, portion of abdomen in which upper third of small intestine usually lies; Y, portion where middle third usually lies; Z, portion where lower third usually lies.

1. *Direct Emptying of the Dilated Gut by means of a Tube.*—This may be done at the primary operation, but patients recover without this drastic measure too often to make it part of the routine in operations for severe appendicitis. A drainage operation may be performed after the condition has been diagnosed; caecostomy, ileostomy, entero-anastomosis, all have their advocates. My own small experience of these operations is not satisfactory (two cases with two deaths after ileostomy). Theoretically, caecostomy drains the gut below an obstruction. Ileostomy is in theory sound; perhaps I have been unfortunate, but I have never seen it save a life, and I have seen absolute rest save several lives.

2. *Measures which Depend on Stimulating the Gut.*—It must be remembered (Fig. 3) that the paralysed gut is already receiving its normal stimulus—distension—in excess and is not responding. All the measures which stimulate the gut—calomel, salines, castor oil, eserine, pituitary—are bound to act most effectively on the normal upper coils of small intestine. Whether they have any effect on the paralysed gut below is very questionable. Their effect will be to force more fluid into the distended cesspool near the ileo-caecal valve. Those who have used Moynihan's tube will know how impossible it is for force from above to empty coils of distended gut. I therefore believe that any stimulation can only add to the difficulties near the ileo-caecal valve, and until the passage of flatus indicates that the tone of the small intestine is recovering all purgation is absolutely contraindicated. The best way of restoring the tone of the gut is to give it rest by administering morphine and withholding food—the great initiator of peristalsis—until flatus is passed.

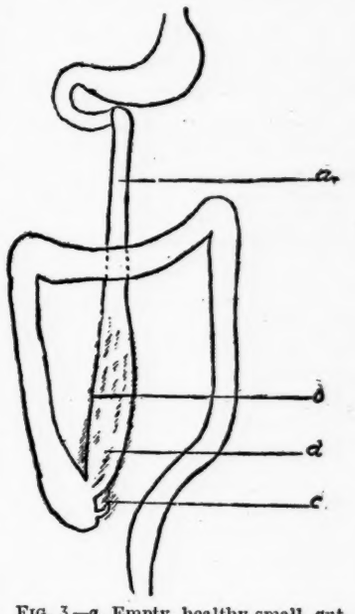

FIG. 3.—*a*, Empty, healthy small gut, readily excitable by food or purgatives; *b*, distended, inflamed, kinked and inexcitable gut; *c*, appendix—commonest primary cause; *d*, fluid faeces—highly toxic if under pressure; left alone, usually no evidence of toxaemia.

Enemas.—An enema can reach the lowest coils of the small gut, and a single effective enema may do good. If it be retained, a second or third can only add to the patient's discomfort. The bowels act because the patient is getting well. He does not get well because his bowels act. If his bowels do not act for a week and he is comfortable there is no occasion to worry. What generally happens when a patient is left alone is that he passes flatus spontaneously about the second or third day. On the fourth or fifth he has a natural call to stool and passes a profuse liquid stool; after that he can have food and a purgative. If he is distended, the effect of a single small turpentine enema may be tried; it may aid him to pass flatus or a motion. Should it be retained or returned unchanged, this must be accepted as an indication that the muscle of the small gut is not yet ready to pass on its contents; he should be left entirely alone except to give morphine if he be restless. The experiment may be repeated after twenty-four hours. Lockhart-Mummery has shown that the so-called high rectal tube, unless passed with the aid of a sigmoidoscope, coils itself up in the rectal ampulla. The cautious use of pituitary extract seems to help a little, but it should never be given in repeated doses, and it acts probably only in the cases that would have recovered without it. The important part of the treatment is to leave the patient alone, give morphine when it is called for, and restrict food without cutting down fluid.

Intestinal Obstruction.

Sometimes it is difficult to decide whether a patient is suffering from paralytic distension due to peritonitis, or from intestinal obstruction due to a band. Organization and contraction of adherent bands of lymph must take place before they can distort the intestine sufficiently to produce obstruction, and this takes six to ten days. This time is an important factor in making a diagnosis.

The cases which show evidence of ileus paralyticus are particularly prone to develop obstruction about this time. The reasons are, I think, that the cause, peritonitis, is present, that it is easy to leave an acute kink in gut which is distended, and there is no peristalsis to straighten out any such kink. It is well to be on the watch in such cases, and to waste no time in exploring again where the slightest confirmatory physical sign exists.

Patients who have a mechanical obstruction nearing completion suffer from attacks of spasmodic colicky pain with short intervals of relief. If this fits in with the time factor the presence of obstruction should be suspected. Visible coils of gut are almost diagnostic of obstruction, and if peristalsis is either visible or audible the diagnosis is no longer in doubt. Vomiting is a late sign of obstruction. It means that the distension has reached the upper coils of gut, It is matter for congratulation if the diagnosis is made and the second operation performed before the patient has vomited.

Lastly, though the results of an enema and the passage of flatus are strong negative evidence that obstruction is not complete, they are not absolutely so. The worst post-appendix obstruction I ever operated on had had a "good result" that morning. In this case the small gut was so distended that it blew out and burst like a bicycle tyre when the abdomen was opened.

Post-operative Peritoneal Infection.

Repeated dark vomits, distension, hiccough, and marked toxaemia, are evidence that the patient, as a whole, and his peritoneum in particular, are failing to cope with the virulence or numbers of the organism. Further operation holds out little prospect of doing any good. There is no one collection of pus that can be effectively drained. The gut is friable and will not bear the gentlest handling, and stitches will not hold if it is torn. The only chance for such patients, and it is a slender one, lies in absolute rest, morphine, and rectal or subcutaneous salines with glucose.

Remittent pyrexia should lead to examination of the abdomen, digital examination of the rectum, and examination of the bases of the lungs. If a residual abscess is diagnosed it is well to wait a little and watch progress unless the patient is going downhill. The majority get smaller and finally resolve. If the abscess gets bigger or the patient deteriorates it must be drained in the appropriate manner. It is best not to await rupture into the rectum or vagina. Such cases do better if deliberately and adequately drained.

A CASE OF PRIMARY CARCINOMA OF THE LUNG.

BY

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THIS case was under continuous observation by one of us in the wards of Addenbrooke's Hospital for four months before death, and in the earlier stages simulated tuberculosis with somewhat interesting and rapid alterations in the physical signs. The correct diagnosis was only reached when definite enlargement of glands above the left clavicle was found to have taken place. Owing to the length of time the case was under observation it seemed to us to be worth putting on record.

Primary carcinoma of the lung is an uncommon disease. Hamman[1] states that 105 cases occurred in 46,169 autopsies, a percentage of 0.2; figures given by Ewing[2] show that 1.0 per cent. of primary cancers occur in the lung.

Primary growths are classified in three groups according to their origin: (1) From the bronchial epithelium; (2) from the bronchial mucous glands; (3) from the lung substance. The type of tumour found in group (1) seems to be localized to the larger bronchi and not to spread diffusely, to break down easily and form bronchiectatic cavities, being histologically essentially columnar-celled. Tumours of type (2) are characterized by abundant mucous secretion derived from the special type of cell of which the growth is composed. They also tend to be localized round the larger bronchi. The third group comprises the diffuse cancers with widespread destruction of lung tissue by rapidly spreading infiltration. The type of cell found in these varies, even in different parts of the same tumour, from columnar to flattened epithelium-like cells. The greater mass of cells are usually cubical in shape. The point of origin of tumours in the third group is difficult to determine, as their growth is rapid and diffuse. The cubical type of cell points to an origin either from the bronchioles or from the lining cells of the alveoli, whose shape often becomes cubical in collapsed lung. The matter is, however, of academic importance. Our case falls within the third group, the tumour being diffuse and the preponderating cells being cubical in type.

Clinically, carcinoma of the lung presents itself as a chronic pulmonary inflammatory disease, as a chronic pleurisy with effusion, or as a local patch of permanent consolidation; the usual diagnosis is pulmonary tuberculosis, fibroid phthisis, or unresolved pneumonia. The symptoms which suggest growth are rapid loss of weight and strength, pain, dyspnoea, and peculiarities in the physical signs, which are frequently unilateral. Pain is by no means always present, but severe continuous pain in the absence of pleurisy, or a constant boring pain with indefinite or unusual physical signs, should arouse suspicion. Fever, though always present in some degree, is usually much less than is found in tuberculosis rapidly advancing; the temperature may not rise above normal for days or even weeks. Sputum may be absent for some time, but in the later stages is frequently abundant; it is usually mixed with blood, and has been likened to currant jelly. Persistence of bloody sputum for weeks and months is very suggestive. The pleura is so commonly involved that pleural effusion is one of the chief signs of the condition; it is often smaller in amount than the physical signs would lead one to anticipate, and it is frequently tinged with blood; but the commonest cause of blood-stained pleural effusion is not malignant disease, it is tuberculosis (Horder[3]). Pneumothorax is a not uncommon occurrence in the course of the disease. Most of these points are illustrated in our case.

A. T. R., aged 27, a french polisher, was admitted to Addenbrooke's Hospital, Cambridge, on December 11th, 1920. He complained that for the past three weeks he had been troubled by shortness of breath, cough, and blood-spitting. He had previously had good health; he had, however, been discharged from the army in March, 1918, for deafness following shell concussion; for this disability he was pensioned. At the time of his discharge he had a cough, which disappeared after treatment for a few weeks in hospital.

He was a poorly nourished man, weight 7 st. 9 lb., a little dyspnoeic, not cyanosed. The physical signs were those of pleurisy, with a little effusion and patchy consolidation of the lower lobe of the right lung; the condition was thought to be tuberculous. During the first fortnight in hospital there was some loss in weight, a daily evening rise of temperature to just under 100°, and an increasing pulse rate. He had a little cough, with the daily expectoration of thin blood-stained sputum in which tubercle bacilli could not be found. Towards the end of December the patient had lost 6 lb. in weight, the evening temperature was rising to just over 100°, the pulse rate still increasing and the physical signs extending.

He was now placed on a balcony under open-air conditions, and at the end of three weeks had improved; he had regained 6 lb. in weight, there was little cough or sputum, though this was still blood-tinged; the evening temperature was not over 99° F. for fourteen days. The physical signs were much the same in the right lung; there were only occasional rhonchi in the left.

On January 25th, 1921, well marked signs of pneumothorax were observed; there was no pain or distress and the onset had evidently been insidious. A skiagram showed a right hydropneumothorax, and that the heart and aorta were displaced towards the right. A few days later blood-stained fluid to the amount of 4 c.cm. was withdrawn from the right thorax; the fluid was sterile and contained polymorphonuclear and mononuclear cells in equal quantity. In the middle of February the patient, who had become much emaciated, complained of constant gnawing pain in the right hip and thigh; in spite of treatment this continued almost without remission to the end.

The pneumothorax slowly disappeared, leaving the whole of the right side of the chest flat and immobile, dull to percussion, with very feeble breath sounds; the heart was displaced towards the right. Early in March enlargement of the left cervical glands was noted; they were soft, painless, and not tender; they rapidly increased in size, and those on the right side became palpable and visible. Towards the end of the month hoarseness, stridor and oedema of the face commenced and the superficial veins of the upper thorax became engorged. These signs of obstruction increased, and the patient died on April 15th, 1921. During the last eight weeks the temperature was normal or subnormal,

At the necropsy the whole of the right lung was found to be tightly adherent to the thoracic wall; the lobes were indistinguishable, almost the whole lung being involved in a hard white fibrous growth, from the cut surface of which thin white material could be easily scraped. The growth was most dense at the hilum and was found to involve the wall of the bronchus almost up to the bifurcation. The only portion of the lung comparatively normal was the extreme lateral part, which was collapsed. The left lung was entirely free from growth, and was emphysematous and congested. The left pleural cavity contained about a pint of milky fluid, chylous in nature and probably due to involvement of the thoracic duct; the pleural walls were in a condition of gelatinous oedema. Bronchial and tracheal glands were involved on both sides, forming a continuous mass with the greatly enlarged glands in the neck. The lumen of the superior vena cava was much narrowed by constriction. On the upper surface of the liver were four small nodules of growth; two of these were half an inch across and two less. The posterior abdominal glands were enlarged, but none were more than half an inch in diameter; on section they showed a similar appearance to that of the main growth.

Microscopically the lung substance is replaced by a mass of cubical cells which, though in most places irregularly arranged,

here and there show attempts at a palisade-like arrangement; they contain very little protoplasm. The original structure of the lung is only indicated by still surviving bronchial cartilage belonging to the larger bronchi, and an occasional small group of glands belonging to the bronchial wall. Fairly numerous blood vessels with well-formed walls are present which may be still surviving vessels of the lung. In many regions marked degeneration is taking place with disintegration of nuclei and general loss of staining power. In these areas accumulations of fat are present. Fat is also present in considerable quantities in tissue which appears to be fibrous in nature, rapidly degenerating and undergoing invasion by columns of cells. The nature of the tumour is carcinoma of the cubical-cell type which has probably grown from the terminations of the bronchioles. The secondary nodules in the liver are very similar except that much more fibrous tissue stroma is present, the cells tend to more regular palisade arrangement, and are in places more of a columnar type. The tumour is not sharply marked off from the liver, which is being rapidly invaded at the growing edge. Isolated batches of liver cells can still be identified here in the fibrous stroma; further in the nodule they have become reduced to little masses of bile only.

The chief points of interest in this case are: the age of the patient, 27 years; the duration of symptoms, five months; the similarity to tuberculosis of the lungs—for example, wasting, fever, cough, haemoptysis, pleural effusion, and pneumothorax; the temporary improvement under open-air treatment, due to the elimination of secondary infection; the total absence of pain; the involvement of one lung only, and, finally, the rapid enlargement of the mediastinal and cervical glands. The right lung was extensively involved while the left lung was unaffected, but yet the left cervical glands were considerably more affected than the right, the path of spread being probably along the course of the thoracic duct.

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[1] *Oxford Medicine*, vol. ii, p. 82, 1921. [2] *Neoplastic Diseases*, Philadelphia, 1920. [3] *Medical Notes*, p. 55, Oxford Medical Publications, 1921.

BLINDNESS AS AN IMMEDIATE SEQUELA OF INFLUENZA: RECOVERY.

BY

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THE following case well exemplifies the conditions described by Jeliffe and White as quoted below. The patient, a young woman aged 17, was, during convalescence from influenza, attacked with papillitis, which was accompanied by blindness of rapid onset and frontal and temporal pain. The sight was gradually recovered in the course of three or four weeks. There was no evidence of cerebral tumour or abscess, or of syphilis, and the Wassermann reaction of the cerebro-spinal fluid was negative.

In view of the large number of cases of influenza at present occurring, the case may be of interest, and useful in that it shows that the prognosis of the blindness is good.

A girl, aged 17, was admitted into the Hull Royal Infirmary on January 4th, 1922, under my care, from the ophthalmic surgeon's out-patient department, by Dr. Bainbridge, who sent the patient in for medical treatment with a diagnosis of "papillitis." He reported the eye condition as follows: Pupils widely dilated, but active; no pain on moving eyes by palpation; consensual reaction present; periphery of fundus not much affected; discs swollen; edge blurred, veins dilated.

The history was that three weeks before admission she was taken ill with influenza, and was in bed for one week. There was no cough. A week later her eyes and eyelids hurt her, and "a dark mist came over her eyes." She could not see to read in bad light or good. In the ward we found that she was blind in the right eye, with no perception of light. With the left eye she could see fingers at one foot. On ophthalmoscopic examination there was marked optic neuritis (papillitis) of both eyes. She had a headache (frontal and left temporal region) which had lasted fourteen days. There was no discharge from the ears, and the right and left drums were normal; in the right ear a whisper was heard at seven feet, with the left conversational voice at five feet only. Bone conduction was slightly diminished in the left ear. There was no tenderness over either mastoid, and no discharge from the nose.

Dr. Ritchie Rodger reported that he could not find anything to suggest ear, nose, or throat origin. The heart was not enlarged; the first and second sounds were loud, and there was no bruit. Lungs and abdomen showed nothing abnormal. The urine, specific gravity 1020, was acid, and contained a trace of albumin; the daily amount was thirty-six ounces; urea, eight grains per ounce. Blood pressure, 95 mm. Hg.

Central Nervous System.—No Kernig's sign, but slight tension on hamstrings of both legs; knee-jerks normal; Babinski's sign not present; no ankle clonus; no inco-ordination. Mentally decidedly dull, answers questions slowly.

A swab taken from the nasopharynx, from which there was a slight discharge, on culture showed pneumococci, staphylococci, and *Micrococcus catarrhalis*.

Treatment.

The patient was given a farinaceous diet, and milk and fish. The following mixture was prescribed: Potassium citrate gr. 5, liq. ammon. acet. ♏ 15, hexamine gr. 5, aq. ad 1 oz.; to be taken four times a day and followed by barley water 2 oz. One hot pack to be given.

On January 7th lumbar puncture yielded 15 c.cm. clear cerebro-spinal fluid; it contained a few lymphocytes but no organisms on culture.

January 9th. No headache; can see hand with right eye.

January 10th. Sees fingers with right eye at 2 feet; with left eye at 7 feet. No headache; is taking food well. There was now no tension on hamstrings; no ankle clonus; no anaesthesia; no inco-ordination; knee-jerks normal; optic neuritis was still present (oedema of discs).

January 11th. No headache; vision the same; 10 c.cm. clear cerebro-spinal fluid withdrawn by lumbar puncture was negative to Wassermann test.

January 13th. Blood pressure 95 mm. Hg; optic discs slightly improved. Pneumococcic vaccine 1 million given.

January 20th. Ophthalmic surgeon's report: She can now read ordinary print; optic discs nearly normal. Right fundus, veins dilated, otherwise nearly normal. Left fundus, disc normal. There was no albumin in the urine. Blood pressure, 102 mm. Hg.

January 23rd. Can read without pain or headache; she feels quite well; oedema of legs and albumin have disappeared.

January 27th: She feels quite well, and is getting up. The ophthalmic surgeon reported: Slight swelling of right optic disc and veins moderately dilated. R.V. 6/24; with −1 cyl. axis 90 vision equals 6/18. Left eye: Fundus normal, vision 6/12; emmetropic. In the ward she was found to be able to read ordinary small print quite well, in not too good a light. She stated that she felt nothing wrong with her head.

De Schweinitz, in his *Diseases of the Eye* (ninth edition), says: "In addition to the intracranial causes of papillitis this phenomenon may arise from a general infection." To this form Uhthoff gives the name "infectious optic neuritis." According to this observer it should be differentiated from those cases which are caused by orbital, intra-ocular, or intracranial lesions, and may be caused by any of the following diseases, placed in order of their frequency: Influenza, syphilis, rheumatism, malaria, typhus fever, measles, whooping-cough, diphtheria, polyneuritis, small-pox, beri-beri, erysipelas, scarlet fever, tuberculosis, typhoid fever, gonorrhoea, relapsing fever.

The neuritis may manifest itself as a papillitis or as a retrobulbar neuritis, and Uhthoff thinks that the optic nerve conditions are most apt to arise during the stage of convalescence and are probably due to the action of toxins and not directly due to micro-organisms.

Again, Jeliffe and White, in *Diseases of the Nervous System* (third edition), say: "Acute axial neuritis occurs usually in young adults, 12 to 24 years of age, more particularly women; frontal or temporal headache, or deep pain in orbit, made worse by pressure or by movements of the eyeballs; loss of sight is rapid, reaching a maximum in five days, and often is so severe that the patient can just count fingers at fifteen feet or is blind."

After the acute stage is over there is gradual recovery of sight. For a more detailed account see article by Jeliffe, "Nervous and mental involvements of influenza," *New York Medical Journal*, November, 1918.

I should like to draw attention to the condition of "slight tension on the hamstrings of both legs." I have noticed it several times in cases where I was of the opinion that an infection had become generalized. It is not Kernig's sign, but approaching it. It is probably due to an excess of toxin in the blood; possibly it may be due to organisms in the blood, but this is, I think, unlikely, as cases in which I have noticed it have in some instances cleared up too rapidly. There is no head retraction or even stiffness or pain on twisting the head or neck in any direction. Also if in a case showing it the test be made daily it will be found gradually to get less in cases that are improving.

A patient showing this sign I was asked to see some months ago was a child, aged 6 years, with acute abdominal pain and vomiting, accompanied by diarrhoea and fever. I decided against any operative interference, chiefly on this sign. The abdomen was tender all over and slightly rigid. The fact that there was slight tension on the hamstrings pointed, in my opinion, to a generalized infection. In appendicitis the same condition is sometimes seen, but only in one leg, or it is much more marked in one leg—namely, the right. In the case of this child I thought that there was a slight early

peritonitis, or a condition which is a prelude to that, possibly pneumococcal. The condition cleared up in twenty-four hours on a powder of calomel gr. 1/8, sodium salicylate gr. 2, bismuth carbonate gr. 3. The implication of the nervous system is probably more intense in such infections.

The Lettsomian Lectures
ON
AMOEBIC LIVER ABSCESS.

DELIVERED BEFORE THE MEDICAL SOCIETY OF LONDON

BY

SIR LEONARD ROGERS, C.I.E., M.D., F.R.S.

[*Abstract.*]

LECTURE I.—ETIOLOGY AND PATHOLOGY.

SIR LEONARD ROGERS began by saying that when he received the invitation to deliver the Lettsomian Lectures he cast about in his mind for a subject from among the many diseases which he had been investigating during his twenty-seven years of research in India. In view of the fact that he had been awarded the Fothergillian medal of the society for his work on amoebic diseases, he came to the conclusion that he might suitably deal with amoebic hepatitis, more especially as the late Dr. Sandwith had ably dealt with dysentery in the Lettsomian Lectures of 1914. The present course, therefore, would be complementary to that given by Dr. Sandwith, and would deal with that phase of amoebic disease investigated at Calcutta during a period when the knowledge of hepatitis generally had made great advances. The work on the liver had been one of the most significant episodes in recent tropical medicine, although perhaps less dramatic than some discoveries, because more gradual.

A Review of Progress.

At the beginning of the present century there was a good deal of confusion with regard to the relationship between dysentery and large single tropical liver abscess. The confusion was due to ignorance of the fact that there were two great classes of dysentery which, until recently, had been regarded as one definite disease. Those whose experience was in countries where the bacillary form prevailed denied its relation to liver abscess, while in Egypt and India, where amoebic dysentery was known to be common, observers had noted a relation. It was now understood that the prevailing type of dysentery in temperate climates was bacillary. In John Hunter's account of dysentery in the army in Jamaica in 1788 he did not mention liver abscess, and considered the dysentery to be the same as that described by Sydenham as so prevalent in London in 1779–80. Recent investigation showed that to this day the bacillary type prevailed in Indian gaols, where the amoebic form was comparatively rare. In the *Researches into the Causes, Nature, and Treatment of the More Prevalent Diseases of India and of Warm Climates Generally*, by James Annesley, of the Madras Medical Establishment, published in two volumes by the India Office in 1828, it was clearly stated that liver abscess was secondary to dysentery. It was quite certain from these finely produced and illustrated volumes that amoebic dysentery was common in Madras early in the nineteenth century.

In the first three editions of his classical work on tropical diseases Manson described dysentery as a single entity; he pointed out that the term probably included a group of diseases, but that up to then the claims for different causative agents, whether bacterial or protozoan, were far from having been established. The confusion at the beginning of the present century was well illustrated in the contradictory nature of articles on the subject in the first edition of Allbutt's *System of Medicine*. Altogether, it was not surprising that the amoeba was not accepted as the cause of the disease. Manson, in his early edition, stated that amoebae were present in more than half his cases, but this did not convince him of their causative powers. At the annual meeting of the British Medical Association in 1902 Andrew Duncan, who had then recently retired from the Indian Medical Service, opened a discussion on dysentery, and advanced the view that the amoeba had nothing to do with dysentery in any country as a causative agent.[1] In Duncan's view, large tropical liver abscess did not bear any specific relation to antecedent dysenteries, although small multiple abscesses did. Very similar views were also expressed at this time in a short editorial note in the *Indian Medical Gazette*. In spite of the valuable work of several observers, especially Councilman and Kartulis, medical opinion at this time was against the theory of amoebic causation.

[1] BRITISH MEDICAL JOURNAL, 1902, vol. ii.

Constant Presence of Amoebae.

Sir Leonard Rogers went on to say that he had published his first paper on dysentery in 1902. It was based on two years' research he had conducted in Calcutta between April, 1900, and the end of 1902, making use of all the clinical and *post-mortem* material he could obtain. The first point he had set out to determine was the frequency with which living amoebae might be found in large tropical liver abscess. It was easy to detect the amoebae *post mortem* in the walls by examining scrapings under the microscope, but much more difficult to detect them in the thick pus of such abscesses. In order to get a larger range of cases than was afforded by *post-mortem* examinations he arranged with his surgical colleagues, when they opened a liver abscess, to place some of the thick pus in one sterile test tube, and in another the light scrapings from the wall of the cavity. Out of some 18 cases examined in this way, he found the amoeba in the pus in four, but in the scrapings of the wall he found it in every case except one. In 20 cases examined *post mortem* he again found the amoeba in the wall in every case except one, the exception being an instance in which the abscess had been opened and drained for fourteen days before the patient died. From this he concluded that amoebae were practically invariably present, a fact which he had verified in scores of later cases, the only exceptions being small and encysted abscesses in which the amoebae seemed to have died out.

Usual Sterility as regards Bacteria.

He turned next to the question of the frequency of pus-forming bacteria in large tropical abscess. Out of 24 cases in which cultures were made from the pus taken in sterile test tubes at the time of operation, 15, or 62 per cent., were sterile. The *post-mortem* examinations told the same story. In three out of five unopened abscesses found *post mortem* there were no bacteria. In a later series of observations, out of a large number of consecutive cases he found 86 per cent. sterile when first opened. It was clear that the great majority of such abscesses were free from bacteria that could be cultivated, although few such abscesses remained sterile in a tropical climate after opening and drainage. His conclusion was that not only were amoebae constantly present, but other causal bacterial organisms were constantly absent. This indicated that *Entamoeba histolytica* was the causative organism in these cases of liver abscess.

The Antecedent Dysentery.

The striking fact had not been explained that the proportion of cases of liver abscess to cases of dysentery in the British Army in India was 1 to 5 or 1 to 7, while in Indian gaols it was one to several hundred. But if the prevailing type of dysentery was amoebic in the army, and bacillary in the gaols, the problem was solved; this was now known to be the case.

It had next to be determined what was the frequency of association between any form of dysentery and liver abscess. Among the cases of liver abscess which he had tabulated for the purpose of the lecture, in four there was no history of dysentery, but even in these, dysenteric ulcers were found *post mortem*, proving that the absence of clinical signs of previous dysentery did not exclude the presence of amoebic ulcers in the large bowel. In three other cases there had been a history of dysentery and no ulcers or scars were found *post mortem*, but only slight congestion; thus it was possible for antecedent dysentery to clear up without necessarily involving any ulceration before the patient died of liver abscess. In order to get accurate data it was essential to obtain both clinical and *post-mortem* records, and even then it was possible that a mild attack of bowel trouble might be overlooked clinically and leave no *post-mortem* evidences. The cases shown in his tables in which the clinical and *post-mortem* records were complete numbered 24, and in 23 (or over 95 per cent.) there were either clinical or *post-mortem* evidences of dysentery, while in 14 (or 58 per cent.) there were *both* clinical and *post-mortem* evidences. On adding certain older records which clinically were less complete, only

9 per cent. failed to give a positive result either clinically or *post mortem*. He concluded that amoebic dysenteric ulceration of the large bowel, often of a latent nature, always preceded the formation of large tropical liver abscess.

It was clear that the conclusions he had reached at the end of the first two years of his investigation were diametrically opposed to those of the distinguished tropical physician who opened the debate on dysentery at the annual meeting of the British Medical Association in 1902. In the following year, while at home on leave, he met Andrew Duncan, who with the utmost candour volunteered the statement that the paper recording these new investigations had completely upset almost everything he had said in that opening address. The paper, however, contained one error, corrected the following year, in its assumption that small multiple abscesses belonged to another category in respect to causation. Whatever the explanation might be, he was now certain that the majority of small multiple liver abscesses seen in Calcutta were amoebic in origin.

In 1913 he was able to supplement the data recorded in 1902 by an analysis of the results of forty-five necropsies which he had performed during the previous ten years; there was evidence of active amoebic dysentery in 78 per cent., and scars of former dysenteric lesions in 20 per cent. more, leaving only one case with no *post-mortem* evidence of dysentery. He recorded at the same time an analysis of careful clinical records of fifty cases of liver abscess during nine years, with a history of dysentery in 72 per cent., and of diarrhoea in 14 per cent., leaving only 14 per cent. with no history of lesions of the bowels.

Lesions of the Bowel in Relation to Type of Liver Abscess.

A close examimation of the distribution and extent of the bowel lesions in various conditions threw much light upon this matter. The positions and extent of the lesions, from the lower ileum down to the rectum, as found in 96 consecutive *post-mortem* examinations, had been examined. In a number of cases of acute bacillary dysentery of less than one month's duration the whole length of the bowel was affected, including generally the lower part of the ileum. In a group of chronic bacillary dysenteries of a month or more in duration all except one showed the lesions limited to the lower half or two-thirds of the bowel. In acute amoebic dysentery, instead of continuous lesions, scattered lesions were found; they were very extensive, the large patches being met with throughout the greater length of the bowel. In chronic cases the lesions were less extensive. In five cases liver abscesses were present—in four of the five multiple small abscesses, and in the other a single small abscess; in all these cases the bowel lesions were extensive. In only one case—a case unusual in its clinical features—was there an exception to the rule that in multiple small liver abscesses there were very extensive lesions through nearly the whole length of the bowel. In cases of large liver abscess the lesions were less extensive; in some cases they were limited to the caecum, but in others they extended down to the ascending colon. In 13 out of 36 cases the lesions were absolutely limited to the caecum, and in 23 they were within narrow limits or there were only scars of old lesions which would not have given rise to any clinical symptoms of dysentery. In all these cases the dysentery was absolutely latent. Thus there was forthcoming an explanation of the former great stumbling-block to the recognition of tropical liver abscess as always secondary to dysentery—namely, the absence of clinical signs of that disease in a large number of patients suffering from the liver affection.

The black sloughs passed in the stools were absolutely diagnostic of amoebic dysentery, but beyond the ulcers the bowel in these cases was healthy. The appearance was very different in bacillary dysentery where, in the whole length of the bowel, there was no healthy part left.

Large Single Liver Abscess.

He dealt next with the method of formation of large single liver abscess. It was generally agreed that amoebae passed from the bowel wall to the liver through the portal vein. The earliest stage of small multiple abscesses of the liver was inflammation with clotting in the branches of the portal vein, which was followed by softening of the thin walls of the blood vessels and extension of the inflammatory process to the liver parenchyma. He believed the addition of a bacillary infection greatly assisted the breaking down of the vein walls. When multiple small abscesses arose in the liver as the result of a pure amoebic infection secondary to sloughing dysentery, the protozoan organisms had reached the liver in enormous numbers. The question of how one or more large abscesses developed as a result of portal infection raised other considerations. In the early stage of his work he was inclined to think that the frequency with which large abscesses occurred in the upper part of the liver, and the fact that in acute amoebic dysentery the protozoan organism frequently penetrated the whole thickness of the bowel wall, suggested the possibility that it passed in the lymph flow. It was, however, possible for liver abscess to be formed by direct extension from the bowel to the liver. Examination of microscopical sections of the walls convinced him that the abscesses were really formed within the liver, and not between it and the diaphragm. It appeared that the abscess, having once originated, developed within the organ. The single liver abscesses were seldom found in sloughing dysentery. It was evident that the development of large single abscesses as a class could not be explained save as due to infection from the bowel through the portal vein. It was necessary, however, to look to another and intermediate stage to explain the ultimate development of the fibrous-walled large abscess, which, however, was not very commonly met with. In the case of large ragged cavities without well-defined walls there was no definite limiting membrane, but the tissues around the irregular cavity were infiltrated by pus. Examination of microscopical sections demonstrated that the process was extending from the central cavity along the veins in which softening and clotting were taking place; in such cases numerous amoebae were present, but in the great majority of cases no bacteria. It was clear that amoebae might reach the liver in large numbers without suppuration in the organ necessarily taking place.

Taking all these facts into consideration, he supposed that in slight or latent amoebic colitis, from which large amoebic abscesses usually resulted, comparatively few amoebae reached the liver, the vast majority undergoing degeneration in the vessels without being able to escape unless there was damage to the walls. In that case only a presuppurative amoebic hepatitis occurred. When the amoebae happened to reach some part of the liver in such numbers as to cause clotting of several contiguous small veins so as to interfere with the blood supply, and produce simple necrosis, allowing the escape of the amoebae into the soft tissues, an abscess resulted. The abscess continued to develop in concentric circles until, if the patient survived long enough, a fibrous capsule made its appearance, and the process then only went on by expansion of the cavity, without further destruction of tissue. Almost all forms of liver abscess were due to pure amoebic infections from the bowel, through the portal vein; the number of amoebae varied. Whether or not an amoebic hepatitis went on to suppuration must often be in the balance, so that such causes as chills and alcoholism might easily precipitate the formation of an abscess, and early treatment avert it. Amoebic liver abscess was now much more easily preventable and curable than it was a few years ago, and future investigators would have little chance of obtaining such material as he had had in past years.

"My conclusions, which are now in agreement with those of more recent observers too numerous to mention, may be briefly summarized. The affection formerly known as tropical liver abscess, both in the acute multiple small form and the chronic large single form, is produced by infection through the portal vein with the *Entamoeba histolytica*, only occasionally assisted by bacteria, and is always secondary to antecedent amoebic ulceration of the large bowel, which is clinically active and acute in the multiple variety, but usually completely latent clinically in the more chronic single form, while such abscesses never occur in relation to bacillary dysentery. These conclusions are a great advance on the view generally accepted two decades ago."

THE fifth Cuban National Medical Congress, held at Havana, was attended by more than 1,500 medical practitioners. It was divided into eight sections, of which five were devoted to medical and surgical subjects, one to pharmacy, one to odontology, and one to veterinary medicine.

IT is announced that the sum of 1,320,000 dollars is to be available from the Sterling funds for the erection of a new building for the Yale medical school, to be known as the Sterling Hall of Medicine. This building will contain a library, a lecture hall, administrative offices, rooms for the teaching staff, and laboratories, with an animal house and a power house adjoining.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

DIAGNOSIS OF INCIPIENT ACUTE APPENDICITIS.

APART from the general desirability of making an early and accurate diagnosis, it became a matter of military necessity in 1917 and 1918 to avoid operation in non-urgent conditions other than wound casualties. The problem had become more acute in the summer and autumn of 1918, owing to the influx of cases of epidemic influenza of the abdominal type, which, in the early stages, presented signs simulating appendicitis. In the course of many observations in a general hospital of the British Expeditionary Force, I came to rely on a sign which I believe to be unequivocal; if present, operation is unavoidable.

This sign is observed, of course, only in the earliest stage: the patient complains of abdominal pain, particularly referred to the epigastrium; he looks ill and is generally vomiting; the decubitus is dorsal. Examination of the abdomen reveals, in the upper left epigastric region, skin hyperaesthesia and intense tenderness, with tonicity of the left half of the uppermost segment of the left rectus abdominis muscle. On the contrary, there is no tenderness nor muscle rigidity over the right iliac fossa. Three or four hours later, there is a commencement of slight pain, tenderness and rigidity in the region usually described, if one elects to wait so long.

On opening the abdomen one finds a process of great omentum approaching, applied to, or actually wrapped around, an acutely inflamed appendix, according to the time which has elapsed since the appearance of the epigastric distress. On account of this phenomenon I have been accustomed to speak of the epigastric syndrome as the "collision-mat sign"—a naval analogy, the omentum being applied to the threatened perforation much as a collision mat is placed over a leak in a warship's hull.

Whether or not this sign occurs in every case of acute appendicitis I cannot say, but I am persuaded that it does become manifest in every case calling for early operation, which, after all, is the practical point. Furthermore, in cases where operation for one reason or another had been delayed until gangrene of the appendix had set in, a history of nausea and vomiting, together with epigastric pain, was generally elicited.

As to the etiology, I formed at first a rough working hypothesis that sickness and pain were due to the drag on the stomach produced by the rapid migration of the great omentum into the right iliac fossa, but it is much more probable that these symptoms are to be explained by pain referred along the great omentum to the stomach in virtue of the development of the great omentum from the primitive mesogaster.

This sign is seldom, if ever, to be noted in patients admitted to a civil hospital, since admission is rarely sought in the earliest stage; its utility, therefore, is that it assists the usual medical attendant to recognize, at the very beginning, a case of acute appendicitis which will certainly call for operative measures, and that as speedily as possible.

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EARLY SYPHILIS OF THE PROSTATE.

ACCORDING to Loyd Thompson[1] only 24 cases supposed to be syphilis of the prostate have been recorded in the literature, and of these only 12 are accepted as authentic. Of the 12 cases only two relate to an implication in the early stage—one was due to a direct extension from a primary sore which had become phagedaenic (Ricord), and the other was possibly a genuine metastatic infection, though the description of the case is meagre (Portillo).

The case here recorded is unique because the patient has never had gonorrhoea or even sexual connexion. In most of the cases of a gummatous prostatitis it is extremely difficult to rule out a possible gonococcal lesion. The patient, a man aged 28, presented himself with a hypertrophic chancre over the right parietal bone. The infection was conveyed, in my opinion, from wearing a hired wig. The body was covered with a diffuse lenticular syphilide, and the patient complained of bad headaches and pains in the bones and joints, and he was much troubled with acute indigestion. I timed the infection to have occurred fourteen weeks before I first saw him.

On asking him to pass water I found that a bead or two of pus appeared with the last few drops, a condition the patient had noticed for the previous fortnight. There was never any blood or meatal discharge, but the urine contained threads and the patient always had the desire to micturate again when he had just finished. On examining the urethra I found acute inflammation of the prostatic portion, which was most marked around the open prostatic ducts. The mucous membrane bled easily. Rectal examination revealed the right lobe of the prostate swollen to the size of a hen's egg. The outline was uneven, the consistency was irregular, being soft in some places and hard in others; in fact a hard band seemed to cut the lobe longitudinally into two soft masses.

Under four intravenous injections of arseno-benzene both the urethra and prostate were restored to their normal condition.

London, W. J. E. R. MCDONAGH, F.R.C.S.

[1] *Amer. Journ. of Syphilis*, 1920, iv, 323.

INFLUENZA (?) ACCOMPANIED BY CONVULSION.

AT 3 a.m. on January 26th, 1922, I was called to see F. T., a man aged 38, and found him propped up in bed, unconscious. The history was that he had never had any serious illness, but that for the last three days he had suffered from a cold, for which he did not go to bed or give up at all as his wife was expecting to be confined. He had gone to sleep as usual the previous evening; on waking at 2 a.m. his wife found his face and chest wet with cold sweat, and he did not answer when she spoke to him. He seemed to be choking; with the help of friends he was raised to a sitting position in bed, which eased the breathing. When I saw him his limbs were rigid, the arms were flexed at the elbow, and the fingers bent into the palms of the hands. The pupils were equal and slightly dilated, the eyeballs rolling upwards on raising the upper eyelid. There was slight gritting of the teeth, but the tongue was not bitten; respirations were slow but not stertorous, and the face was cyanosed; the temperature was normal. He remained in this condition for four hours, when the rigidity gradually passed off and consciousness returned. At 10 a.m. the only sign of meningeal irritation—supposing that to be the pathological factor—was a certain amount of slowness in speech and perception. There was no paralysis, and recovery was rapid and complete.

Incidentally the shock caused his wife to be so deaf for a time that she did not hear unless spoken to very loudly, but this condition passed off in six hours. After the shock she received at 2 a.m. she found no more signs of life in the foetus *in utero*, and on January 29th was delivered of a full-grown child which had every appearance of having been dead for a few days.

Cinderford, Glos. J. N. BEADLES, M.B., B.S.Lond.

MALLET FINGER.

DR. LAIRD'S excellent radiographs of a case of "mallet finger" in the BRITISH MEDICAL JOURNAL of January 21st, illustrates a fairly common if not usual condition in this injury. I have only seen one case in which the small fragment of bone was not present. I have shown several similar radiographs at the Reading Pathological Society during the last ten years. I think Dr. Laird will find the characteristic detachment of a fragment of bone, where the insertion of the exterior tendon is torn off the phalanx, is well known to radiologists and surgeons.

Some years ago I gave Mr. Warren Low a similar radiograph; the injury at that time was well known to him, and he wanted a radiograph of it. The way this injury was produced in Dr. Laird's case was unusual and interesting.

Commonly a blow at the end of the finger, as from striking a door in the dark with the fingers extended, is the cause of the trouble. When not recognized and treated it produces a characteristic deformity.

Reading. W. J. FOSTER, F.R.C.S.

THE Cox-Cavendish Electrical Company has issued a new edition of its catalogue of *x*-ray and electro-medical apparatus. It fills 340 pages, is freely illustrated, and divided into sections. Special attention is directed to the "Plurostat" earth-free universal apparatus. Inspection of the volume affords a good indication of the many activities of the company. A copy will, we are informed, be forwarded to readers of this JOURNAL on application to the company, which has show-rooms at 105, Great Portland Street, London, W.1, and 15, Hanover Street, Edinburgh.

Reports of Societies.

THE TREATMENT OF GASTRIC ULCER.

AT a meeting of the Royal Society of Medicine on February 2nd a discussion took place on the treatment of gastric ulcer, following upon the discussion on diagnosis held a week previously and reported in the last issue. The chair was taken by Dr. G. NEWTON PITT, and the discussion was opened by Sir W. HALE-WHITE, whose paper is printed at page 214.

Sir BERKELEY MOYNIHAN, who followed, said that with almost everything which had been advanced by Sir William Hale-White he found himself in complete agreement. He would say frankly that there was no clinician in the world who, basing his opinion upon clinical evidences alone, could say with confidence that a gastric ulcer was present. By only two methods could a certain diagnosis of gastric ulcer be made: one by the radiographer inspecting the stomach after a bismuth meal, the other by the surgeon on removing the curtain of the anterior abdominal wall. By taking such a standpoint all statistics relating to gastric ulcer were vitiated, because so many other conditions had been called gastric ulcer and had been treated medically or surgically for that condition. Records of hundreds of cases were published by physicians in favour of a certain line of medical treatment, but unless there was correct diagnosis to start with, no reliance could be placed upon their conclusions. Mistakes in diagnosis upset considerably the work of the surgeon. He was sorry to say that there were still surgeons who operated upon the diagnosis of a physician. Unless the diagnosis was confirmed at the time the operation was done no operation dealing directly with the stomach was permissible. The disasters which occurred were attributed to the inefficiency of the surgical technique for dealing with gastric ulcer; this was quite true if the "gastric ulcer" was situated in the colon or the gall bladder, or in the uterus where a foetus was developing! It should be clear that when gastric ulcer was spoken of what was meant was a definite structural lesion having its origin and location in the stomach. Such a gastric ulcer ought to be cured by medical treatment. It was because medical treatment was so disastrously inefficient in this and every country that the surgeon was called in; partly also because the rich would not bother to spend the time required for the treatment, and the poor did not have accommodation, so that out-patients were given bottles of medicine and then went home and ate pickled herrings. If serious and protracted medical treatment were carried out and given its fair chance gastric ulcers should be healed.

When reluctantly the surgeon came to operate—reluctantly because every surgeon was a physician engaged in surgical practice, and would rather heal his patients without surgery if he could—he had a considerable choice of procedures. When there were many alternative procedures in surgery it meant that none of them reached the standard of immediate success and protracted relief of symptoms. The history of the surgical treatment of gastric ulcer was a little bewildering. It began with the performance of gastro-enterostomy in cases of obstructive lesion. The operation acted like a charm. Everybody had seen veritable resurrections. This acted as a decoy for some other dyspeptic. If this other dyspeptic was operated on in the absence of gastric ulcer he—he used the masculine pronoun because gastric ulcer was twice as frequent in men as in women—became one of the disastrous cases of which he had just spoken. If operation were performed in cases in which the lesion did not form an obstruction the immediate results were sometimes good, sometimes indifferent, sometimes bad. They were good in those cases in which there was a pyloric spasm, causing six-hour retention of food. Gastro-enterostomy was really a mechanical operation, relieving the retention from which the patient was suffering. The after-history of patients on whom gastro-enterostomy was done showed that a certain number got well, others complained of this, that, and the other, or came back for a second operation. He had seen new gastric ulcers develop and perforate in two patients on whom gastro-enterostomy had previously been performed. When these various unfavourable factors were assessed—when it was remembered that gastro-enterostomy frequently did not give permanent relief, that a gastric ulcer could develop subsequently and perforate, that gastric ulcer might develop into carcinoma, and that gastro-jejunal ulcer followed in a certain percentage of cases—it would be seen that the mortality of gastro-enterostomy for gastric ulcer made the operation four or five times as dangerous as gastrectomy. Dr. Mayo's son-in-law, Dr. Balfour, of Rochester, Minnesota, U.S.A., had introduced a method of cauterization of the ulcer and gastro-enterostomy. It was an excellent operation, but the mortality was as great as that of gastrectomy.

To cut a long story short, he himself came to the conclusion that the only operation which was worth while in the great majority of cases was partial gastrectomy. Even if the ulcer was small and away from the pylorus, he still practised that method. In only one case out of 118 had he been required to do a secondary operation, and that was when he had left a long loop between the stomach and jejunum. Now he swept the jejunum straight across, just below the duodeno-jejunal flexure, leaving no loop, and put the proximal part of the jejunum up against the greater curvature of the stomach. The only case which could be called unsuccessful was that of a girl, with an ulcer on the lesser curvature of the stomach, and from whose right iliac fossa he had removed a mass of tuberculous glands. That girl had attacks of diarrhoea, which might be due to the operation, but on the other hand might be due to tuberculous disease of the intestine. When gastrectomy was performed, there was an end of the matter; the surgeon never saw his patient again, except when he came to express his gratitude. He had come most confidently to the conclusion that in the vast majority of cases, whenever possible, a gastrectomy should be done, but it should be done only after the most careful preparation, and with infinite care and gentleness and with the most painstaking attention to detail. There was no need to hurry over it, and when it was finished the surgeon had the pleasant feeling that it was impossible for anything to go wrong. He gave to the Cambridge Meeting of the British Medical Association in July, 1920, his statistics up to that time. He had then done 80 gastrectomies for gastric ulcer and had had 2 deaths; he had now done 118, and the deaths still only numbered 2. At Cambridge he reported 563 operations for duodenal ulcer, with 3 deaths; he had now done 651, with no more deaths. He was beginning to get rather anxious about every patient who came in, wondering when the average mortality would assert itself. He repeated that no pre-operative diagnosis could be held valid. If the ulcer was really there it must be dealt with radically. The immediate recovery after this operation was extremely satisfactory; the ultimate recovery was secured in a way which no other surgical procedure could guarantee.

Mr. JAMES SHERREN thought that while it was difficult to draw a line between acute and chronic ulcer, it was convenient to retain those terms. The acute gastric ulcer, unless it went on to perforation, never required direct operative treatment of the stomach. Chronic ulcer—by which he meant an ulcer more often met with in men than in women, which recurred from time to time, leaving the patient perfectly well in the intervals—in a large proportion of cases, at any rate in hospital practice, did require treatment by operation. That acute ulcers, which were usually multiple, resulted from infection he believed to be proved, and if the cause could be removed and suitable medical treatment adopted, the ulcer healed, and the patient remained well without surgical interference. If relapses occurred after efficient medical treatment, including rest in bed, the case should be considered surgically, and, of course, on perforation, immediate surgical measures were called for, but the procedure was simple, the opening should be closed; gastro-jejunostomy had no place in the treatment of acute ulcer of the stomach. An ulcer which perforated, however, was as a rule chronic. Among 300 cases of perforated gastric ulcer at the London Hospital treated by operation, only 87 were of the acute variety; the large majority were chronic ulcers which spread rapidly. When an ulcer reached its chronic stage he was not convinced of its curability apart from operation. The fact that a chronic ulcer was undoubtedly a precancerous condition should be borne in mind, and operation should include removal of the ulcer in some way, in view of its possible malignancy. He appreciated Balfour's method of destruction with the cautery and gastro-enterostomy in the case of small free ulcers; the majority of others, he thought, were best treated by partial gastrectomy. The occurrence of stricture in the stomach or pylorus did not call for any difference in procedure; the condition of the ulcer, and not its mechanical results, should be the determining factor in treatment. After an operation it was always necessary to impress upon the patient the fact that the

physiological state of affairs was not what it was before operation, and that for three months at least he must take food which would not irritate the jejunum. With the earlier recognition of the cause of the trouble they all hoped that the need for operation would be avoided, for although the operation restored the patient to health, it altered very materially his physiology of digestion.

Sir W. H. WILLCOX stated that it was difficult to formulate rules for the treatment of gastric ulcer cases, because every case presented individual features with regard to its history and clinical symptoms. Except in those very acute cases involving perforation or almost complete pyloric obstruction, where immediate surgical measures were imperative, it might be accepted that a careful course of treatment on medical lines should be carried out. This might in some cases result in the healing of the ulcer and the cure of the patient, but it would at any rate place the patient in a more suitable condition for undergoing operation subsequently should this be necessary. In a case in which diagnosis had been established, if the history showed only a duration of a few weeks, there was strong reason for the postponement of operative measures. His recommendations were complete rest in bed and regular feeding every two hours with 6 oz. of citrated milk, to which was added 20 grains of sodium bicarbonate. Over-citration of the milk was to be avoided, since it predisposed to haemorrhage. The first important part of the treatment was the removal of the source of infection from the mouth. A careful examination of the teeth should be made. In his experience oral sepsis was the most important cause of gastric ulcer. Sir William Willcox continued:

In my experience oral sepsis is the most important cause of gastric ulcer, and in cases where the gums and teeth are to external appearances healthy there is frequently found by a careful *x*-ray examination evidence of apical dental infection in the shape of apical dental granulomata or even abscesses. In all cases an *x*-ray examination of the teeth should be made, and teeth showing evidence of being sources of infection should be removed. It is well for such teeth to be submitted to a bacteriological examination, care being taken to prevent external contamination as far as possible. Almost always in these teeth evidence is obtained of the presence of streptococci other than those which are the inhabitants of the healthy mouth. Since oral sepsis as a causative factor in gastric ulcer is generally accompanied by a like infection of the intestinal tract it is advisable for daily Plombières colon irrigations to be carried out for a few days and a bacteriological examination made of the intestinal washings. In many cases an abnormal preponderance of pathogenic streptococci will be found. A combined vaccine of the streptococci from the mouth and intestines may with advantage be made and reserved for use if required. When the mouth has been set in order and the colon irrigations carried out for a few days treatment on the following lines is advisable.

Diet on the lines laid down by Lenhartz has been found most satisfactory, and coupled with this a mixture containing bismuth carbonate 20 grains, magnesium carbonate 10 grains, with 40 grains of sodium bicarbonate, given an hour after food.

To the mixture glycerin of carbolic acid 5 to 10 minims may be added with advantage for its antiseptic properties, and in cases of hypersecretion tincture of belladonna in 5-minim doses should be added. Large doses of alkalis must be given to be effective, and they should be repeated at four-hourly intervals.

In this connexion may be mentioned a case of pyloric ulcer in a medical man whom I saw twelve years ago. He had had three severe attacks of haematemesis and melaena at intervals of a few months from a pyloric ulcer, and in consequence of this I advised operation, but in the interim he was to take a mixture of bismuth carbonate and sodium bicarbonate in large doses three times a day. The patient was very averse to operation, and said to himself, "If the medicine is really effective, surely it should be taken at night as well as by day," so he took the medicine every four hours day and night for three weeks. He made a complete recovery without operation, and has been well ever since.

In my experience medicinal treatment on the lines laid down above usually results in apparent cure in early cases.

Recurrent Cases.—It is very common to meet with cases where several attacks of gastric symptoms have occurred, each lasting several weeks or months. In such cases a course of treatment on the lines laid down should be carried out, but if when the patient has reached the full dietary on Lenhartz lines symptoms should still recur surgical treatment is advisable.

Haemorrhage.—In cases of gastric ulcer where the diagnosis has been established (I am not referring to cases of gastrostaxis or haematemesis from other causes than gastric ulcer) the usual remedies for the arrest of haemorrhage should be given including serum injections. It is advisable, in my experience, to withhold all food by the mouth except occasional teaspoonful sips of hot water or a little ice. Normal saline should be given per rectum every four to six hours, as much as can be retained, to which may be added 2 per cent. of glucose. Five days after the haemorrhage has ceased Lenhartz diet should be given. It is extremely rare in my experience for a patient to die from haemorrhage from gastric ulcer, and I do not favour surgical treatment in the acute stage of this condition. When, in spite of treatment, the haemorrhage recurs, operation may be necessary.

In one case recently under my care the patient had four recurrent attacks of haematemesis at intervals of about six days. Since a fatal result seemed probable without surgical treatment, my colleague, Mr. Maynard Smith, operated upon the patient, who was given immediately before the operation a blood transfusion. This procedure was most satisfactory, and the patient made a good recovery, putting on 2 st. in weight after the operation.

Gastric lavage, with solution of sodium bicarbonate 1 drachm to the pint, has been found useful in cases of pyloric ulcer associated with spasm of the pylorus, and this followed by medicinal treatment may be successful.

Occurrence of growth in gastric ulcer is so rare, in my experience, that the possibility of its occurrence should not deter one from carrying out careful treatment on medicinal lines in cases of gastric ulcer. The very interesting observation of Dr. Spilsbury in the previous discussion supports this line of action. In cases of hour-glass contractions of the stomach symptoms persist usually in spite of medical treatment, and surgical treatment is necessary. In cases of pyloric obstruction, which does not disappear under medical treatment, surgical treatment is necessary and gives brilliant results. In cases with recurrent attacks with haemorrhage surgical treatment is indicated. In cases of chronic ulcer in which medical treatment fails to give permanent relief surgical treatment is advisable. It need hardly be said that immediate surgical treatment is imperative where signs of perforation are present. The physicians will look forward with interest to the methods of surgical treatment advocated by their surgical colleagues. It may be added that after surgical treatment in some cases a recurrence of symptoms may occur after, perhaps, a long period. In such cases careful search should be made for any possible source of toxic infection. It will often be found in the mouth or intestine, and if removed an amelioration or cessation of the recurring symptoms is to be expected.

Dr. A. B. SOLTAU said that all speakers had suggested an infective origin of gastric ulcer, or at any rate the possibility that it need not originate from a local cause in the stomach, and this, he thought, was an extremely important point to remember and to inculcate in the teaching of medicine. It was generally agreed that repeated haemorrhage threatening life required surgery, and that probably cases constantly relapsing were subjects for operation. The acute peptic ulcer was essentially a medical problem, and one which should invariably be cured and remain cured by treatment on medical lines. Whether or not chronic ulcer was the same type of lesion was very difficult to determine. Personally he had not often found, on examining cases with chronic ulcer which were in the fourth decade of life, any history of ulcer during the previous decades. The so-called chronic ulcer was the difficult part of the problem. At what point should medical treatment be despaired of? How many relapses should there be before the physician confessed that the case was beyond him? As a partial answer one would suggest that it depended upon the economic condition of the patient, because undoubtedly one could, if not cure, at any rate render more comfortable those who were in easy circumstances and who were not exposed to the daily toil of wage-earning. Such cases needed at least twelve months of careful watching, dieting, and treating if a satisfactory recovery was to be made. He pleaded for team work in the profession in order to arrive at a more satisfactory position with regard to gastric ulcer. While the literature and the statistics suggested considerable success, he knew in practice that there were a lamentable number of cases following operation which were in no way bettered, but continued to have pain, vomiting, and wasting, largely because efficient after-treatment had not been maintained, and also because the psychological side of the treatment had been neglected.

Mr. A. J. WALTON spoke chiefly of perforated ulcers. That an operation should be undertaken in so grave a complication was beyond question. The only doubt was whether gastric perforation could occur with an acute ulceration. A careful investigation in the *post-mortem* department had shown 79 cases of perforation, 78 of which were chronic ulcer, and

of the other no note was made as to whether it was acute or chronic. He believed that an ulcer which perforated was always chronic; therefore suture alone was insufficient and gastro-enterostomy should be done. His own figures showed 32 gastric perforations with 13 deaths, and 19 duodenal perforations with 5 deaths. The mortality of 35.2 per cent. was high, but he had never refused operation even in the most severe cases. Pyloric and duodenal ulcers were satisfactorily treated by posterior gastro-enterostomy. There were two possible objections—one that carcinoma might arise at the seat of the ulcer and the other that the operation might be followed by gastro-jejunal ulceration. A careful attention to the clinical history would often reveal the presence of very early carcinoma, and if the history left any doubt as to the nature of the lesion, partial gastrectomy should always be performed. The danger of gastro-jejunal ulcer appearing was real; the frequency about 2 per cent. He did not believe that occlusion of the pylorus increased the frequency. The doubt was whether the danger of onset of gastro-jejunal ulcer was sufficient to demand partial gastrectomy as a routine. The mortality of this operation was bound to be high, and in this respect would outweigh the risk of gastro-jejunal ulcer. The speaker also discussed ulcers on the lesser curvature. Gastro-enterostomy, while it would not always cure a lesser curvature ulcer, often led to considerable improvement; with a very large ulcer it was his custom not to perform a jejunostomy, but a gastro-enterostomy with occlusion of the pylorus; in several cases there were recurrences after a year or so, but a second operation then would reveal an ulcer so decreased in size that excision was easily possible. If gastro-enterostomy was unsatisfactory, operation would have to consist either of gastrectomy or of local treatment, such as excision or cauterization, which must be combined with gastro-enterostomy to prevent recurrence.

Mr. H. W. CARSON said that his surgical methods had undergone a certain transition. He began by doing gastro-enterostomy in practically all cases of gastric ulcer, but the proportion of perfect cures was not high enough to satisfy him. About four years ago he adopted some form of partial gastrectomy, at first sleeve resection in selected cases, and was well satisfied with the results, but the scope of this treatment was limited to ulcers in the lesser curvature and the simpler forms of hour-glass. His next step was to do Billroth II for lesser curvature ulcers, and, as a natural consequence, the Pólya operation modified as recommended by Sir Berkeley Moynihan. As a result, he now restricted gastro-enterostomy entirely to a proportion of prepyloric and pyloric ulcers, and instead of some 60 per cent. of perfect results he had 83 per cent. (His figures were very accurately determined because it was his custom at stated intervals to review the result of his gastric operations by getting in touch with his patients, and his last period of review embraced 118 cases of gastric or duodenal ulcer.) The really difficult ulcer was the chronic lesser curvature ulcer which had progressed to the saddle-ulcer stage or had become adherent to the pancreas. For saddle and adherent ulcers he adopted the Lardennois-Pauchet approach through the posterior attachment of the great omentum to the transverse colon, opening the lesser sac and stripping the colon away at the same time; this seemed to give the clearest view of the adhesion and make separation fairly easy, safeguarding also the middle colic vessels. In perforation he was in favour of the least possible operation: he did not excise the ulcer, nor did he perform a gastro-enterostomy, nor wash out the peritoneal cavity. He was content to sew up the perforation, infold it, and drain the pelvis through the suprapubic wound, using no drain in the upper abdomen. There was no doubt that if cancer was excluded gastric operations were attended by very low mortality. In 54 consecutive operations for gastric ulcer, in 29 of which some form of partial gastrectomy was done, he had had only one death, and that in a case almost hopeless from the first.

Mr. J. E. ADAMS said that the reason why surgeons favoured excision was that, whatever might have been said by Dr. Spilsbury in the previous discussion, there was in the back of their minds the thought that in excising cases of chronic ulcer they were preventing the patient from getting carcinoma of the stomach. He had looked up his hospital records of cases of carcinoma of the stomach in which a gastro-enterostomy had previously been done, and he found one, or sometimes two, of these cases in a year out of between thirty and forty cases of carcinoma. That was not a large proportion, but he had come to the conclusion that gastro-enterostomy was a very poor preventive of carcinoma if the conditions were such as to favour carcinoma eventuating from chronic ulcer.

Mr. GORDON TAYLOR favoured partial gastrectomy, because he had found it give extremely good results. He followed this procedure in ulcers on the lesser curvature and near the pylorus, and particularly in ulcers which had given rise to severe haemorrhage, and reserved gastro-enterostomy for the smaller ulcers, with or without excision. Out of 42 partial gastrectomies, the mortality amounted to 7 per cent.—too high, but still, having regard to the nature of the cases, not unsatisfactory.

Dr. E. P. POULTON raised the question why some ulcers became chronic. There were certain mechanical conditions about which little was known, but which very often could be relieved by gastro-enterostomy; it might, for example, be retention of wind, coupled with the movements of the stomach, which kept the ulcer from healing. With regard to medical treatment, the main point was rest in bed, and of course very light diet, with frequent meals and the administration of alkalis. He believed that the important part of alkaline treatment was the liberation of CO_2, affecting the distension of the stomach and altering the motility.

Dr. NEWTON PITT, in summing up the discussion, remarked that there was more to be said for medical treatment now than was the case some years ago. As yet it was not possible to say what was the cause of the ulcer nor the factors which made it persist (for the symptoms did not run co-ordinately with the keeping up of the hyperacidity). The majority of ulcers, however, did respond to medical treatment; if they did not so respond within a reasonable time there must be some definite cause, such as adhesions or spasm of the pylorus. In cases whose symptoms were not cleared up within a few weeks no medical treatment was going to do any good at all. Such cases must have operative treatment, either by gastro-enterostomy or gastrectomy. A great deal had still to be learned with regard to the after-results of gastro-enterostomy. On the South Coast, he believed, some practitioners saw quite a number of cases in which gastro-enterostomy had been done, with unsatisfactory results and persistence of symptoms. As time went on, the tendency would be for hypertonic stomachs to be treated by gastrectomy rather than by gastro-enterostomy.

ENLARGED PROSTATE.

THE fifth meeting of the Ulster Medical Society was held in the Medical Institute, Belfast, on January 26th, with the President, Dr. ROBERT HALL, in the chair.

Mr. A. FULLERTON read a paper entitled "Hints on the diagnosis and treatment of cases of enlarged prostate." The paper was illustrated by a number of very fine lantern slides. The lecturer pointed out that enlarged prostate was by no means a condition peculiar to old age; he had had a case where the symptoms began at 36; in another patient, aged 45, he had removed the prostate for non-malignant enlargement. The nature of the obstruction varied, and the types were described. The symptoms were classical and well known. Many had an enlarged prostate, but did not suffer from it; and, on the other hand, the symptoms might be due to other causes—calculus, papilloma, etc.; the cystoscope might be dangerous, and its use demanded the greatest caution; the catheter and *x* ray examination were of great service in making a diagnosis. With regard to treatment, the patient must be instructed in the necessity of immediately satisfying the desire to micturate; he must relax and not press, and, of course, avoid chill, prolonged motor drives, alcohol, etc. He had used the *x* rays, and found improvement in some, not in others. He had not tried massage. He emphasized the warning not to empty a very distended bladder at once; it was remarkable how such distensions occurred without pain; sudden emptying might cause sudden congestion of the urinary tract from relief of pressure, and so suppression and death; a clip on an india-rubber catheter left in the bladder could be used and avoid the danger by letting away a little urine at a time; for the same reason operation should not be undertaken during retention. His plan was to tie in a catheter, irrigate daily for sepsis, and operate at the favourable moment; the treatment of haemorrhage and cystitis was on the same lines.

Mr. Fullerton then gave his experience of renal inefficiency, and referred to Dr. W. W. D. Thomson for the methods of testing the functioning of the kidney. He said he had had

the greatest improvement in doubtful cases, due to rest, attention to diet, and either tying in a catheter or doing a preliminary cystotomy; the prostate was removed ten days later. He referred to the urethral and perineal operations and their success in the hands of the originators. He always carefully explored the bladder through the suprapubic wound.

Dr. W. W. D. THOMSON said he relied most on the phenol red colour test and on the estimation of the blood urea; he divided these prostate cases into three groups. The first contained those who had 30 per cent. of the phenol red and below 0.7 per litre of blood urea; these admitted operation any time. The second contained those who had 20 per cent. of phenol red and from 1 to 7 urea per litre of blood; these were borderland cases and required rest, free evacuation of urine by retained catheter. The third group were still less satisfactory and were mostly inoperable. He thought the question of anaesthetics was very important, owing to the large number of these patients who had acidosis.

Mr. S. T. IRWIN rather objected to tying in a catheter; he had favoured lately the preliminary cystotomy.

Dr. MORRISON referred to the huge distension of bladders without pain and to the difficulty of diagnosis between simple and malignant enlargement of the prostate.

Mr. CRYMBLE raised the question of introducing the hand into the bladder.

Mr. FULLERTON, in replying, said he favoured gas and oxygen as an anaesthetic. Spinal anaesthesia had not been satisfactory; the first stage, of course, was done under a local anaesthetic; 15 per cent. of cases turned out to be malignant; the most difficult was the small fibrous prostate. He enlarged on the advisability, where the patient could stand it, of the Thomson Walker operation, making the prostatic and cystic cavity into one.

HYPERTHYROIDISM IN PREGNANCY.

THE annual meeting of the North of England Obstetrical and Gynaecological Society was held at Manchester on January 20th, when Mr. Harold Clifford, Manchester, was elected president for the ensuing year. The retiring president, Mr. CARLTON OLDFIELD, delivered a valedictory address on the treatment of pernicious vomiting of pregnancy. He said that he had met with 29 cases during the last fifteen years; there had been no deaths, and he had emptied the uterus only in one instance. His treatment consisted in removal of the patient to a hospital or nursing home, prescribing ordinary diet, and not allowing her to have any bowl in which to vomit.

Mr. LEYLAND ROBINSON (Liverpool) read a paper on hyperthyroidism during pregnancy. The thyroid and parathyroids, he said, formed one glandular unit intimately concerned with the growth of cells, the full development of the normal functions of the sexual organs, and the regulation of calcium metabolism. Special activity was seen at puberty, during menstruation, and especially during pregnancy, when the extraordinary foetal demands for calcium led to a physiological hyperthyroidism.

Three clinical groups were described: (1) Physiological hyperthyroidism, characterized by symptomless enlargement of the thyroid gland, and occurring in 50 per cent. of pregnant women. (2) Graves's disease, a condition not due to simple thyroid excess, but the result of toxaemic changes involving the whole endocrine system. Such changes favoured sterility, and therefore pronounced Graves's disease was rarely found associated with pregnancy. (3) Minor degrees of hyperthyroidism were relatively common, and the speaker described fifteen cases in which the symptoms of hyperthyroidism were combined with others suggestive of tetany.

Calcium depletion, the result of prolonged lactation, rapid child-bearing, and insufficient nourishment, appeared to be an important etiological factor, and called in such cases for the exhibition of calcium salts. In addition, parathyroid had been given in order to meet a possible deficiency, suggested by the clinical resemblance to tetany, and also because this gland appeared to have a definite action in fixing calcium in the tissues or preventing undue elimination by the blood. His results had been encouraging, and in many cases all troublesome symptoms had disappeared.

AT a meeting of the Newcastle-upon-Tyne and Northern Counties Medical Society, held on February 2nd in the library of the Royal Victoria Infirmary, an address was delivered by Dr. S. A. KINNIER WILSON on "Common nervous symptoms and their diagnostic significance." The lecture was illustrated by lantern slides, and will be published in full in the *Journal* of the Society.

Reviews.

THE AUTONOMIC NERVOUS SYSTEM.

PROFESSOR J. N. LANGLEY of Cambridge has begun the publication of a book on *The Autonomic Nervous System*.[1] The leading part in the elucidation of the functions of this system has been taken and is being taken by British physiologists, and Professor Langley, would he put his modesty aside for a moment, might well say *quorum pars magna fui et*, we will add, *sum*. The book, it may be assumed, will, when complete, be a full presentation of the present state of knowledge, and already we find physicians and surgeons applying that which has been acquired to the diagnosis and treatment of disease.

In the section now published (Part I) Professor Langley begins by discussing the varied nomenclature of the system of nerves to which, in 1898, he applied the name autonomic, having in mind a local autonomy. It is admitted that the adjective autonomic may suggest a much greater degree of independence of the central nervous system than in fact exists, except perhaps in the part of the system situated in the walls of the alimentary canal, but it is considered to be more important that new words should be used for new ideas than that the words should be accurately descriptive. The superiority of the title autonomic over the terms already employed, such as vegetative, involuntary, and ganglionic, is vindicated, and the autonomic nervous system is defined as consisting of the nerve cells and nerve fibres by means of which efferent impulses pass to tissues other than multinuclear striated muscle.

Professor Langley supplies a table in which the peripheral nerves, with the exclusion of the olfactory, optic, and auditory, are classified into the somatic, afferent (dromic and antidromic action) and efferent to striated muscle; the autonomic system is divided into the sympathetic (thoracico-lumbar), the enteric (plexuses of Auerbach and Meissner), and the parasympathetic, including the bulbo-sacral and the tectal divisions supplying special parts—for example, in the case of the tectal division, the sphincter iridis and the ciliary muscle. The sympathetic, on the other hand, is distributed to the whole of the body. But it does not follow that either system of nerves has an appreciable effect on all the structures in the region to which it runs; thus, although both the sympathetic and the parasympathetic nerves run to the eye, it is an open question whether any part of the eye is innervated by both nerves. In the chapter dealing with the nerve fibres of the autonomic system W. H. Gaskell's epoch-making work, dating from 1886, is critically considered.

In the section devoted to the specific action of drugs on the sympathetic and parasympathetic systems it is shown that, although adrenaline and some related substances produce effects nearly always like those caused by stimulating sympathetic nerves, and pilocarpine and muscarine produce effects usually resembling those produced by stimulating parasympathetic nerves, yet the correspondence between the action of drugs and nerve stimulation is not absolutely exact. The problem of the cause of the correlation between adrenaline and sympathetic nerve action on the one hand, and that of pilocarpine and parasympathetic nerve action on the other is fully discussed.

The last chapter deals with the tissues innervated by the autonomic nervous system; cardiac muscle, nearly all unstriated muscle, most glands, and some pigment cells have been proved to be affected by efferent autonomic nerves; the details of innervation are for the most part reserved for consideration under the separate nervous systems, but the question whether the cutaneous pigment cells, capillaries, and striated muscles are innervated by any part of the autonomic nervous system is exhaustively discussed.

In conclusion, it may be said that this volume sets forth a closely reasoned argument based on many years of research and a complete knowledge of the labours of others on the subject.

SURGICAL DIAGNOSIS.

IN reviewing books on clinical diagnosis for English students there is necessarily some reserve. Our tradition has been, until lately, to teach students clinical surgery and medicine over the bed and not from books. It is to be hoped that the

[1] *The Autonomic Nervous System*. Part I. By J. N. Langley Sc.D., LL.D., Hon. M.D., F.R.S., Professor of Physiology in the University of Cambridge. Cambridge: W. Heffer and Sons, Ltd. 1921. (Demy 8vo, pp. 80; 1 figure. 5s. net.)

system currently fashionable will not lead to the sacrifice of that invaluable practice, with the necessity for lavishly illustrated books on diagnosis to which in Berne the issue of a seventh edition of DE QUERVAIN'S already well-known work is witness. That a third edition in English should be called for is the best evidence that here too—and in America—such books are needed. It may be that "practitioners" do find help from an up-to-date textbook in supplying what they can no longer see daily, as the student does, in hospital beds. It is well, therefore, that so excellent a book, so thoroughly illustrated, so competently translated as Professor de Quervain's *Clinical Surgical Diagnosis for Students and Practitioners*[2] should be at their command. The author has always pursued the plan—in principle universal, but in this country recently associated with the name of Mackenzie—of starting from the symptoms of which the patient complains, and of keeping them in view whilst narrowing down the problem by suitable questions until positive observations permit diagnosis.

It is perhaps impossible to write a book of general guidance for problems thus essentially individual, but the author has attacked his task in the spirit of one who habitually assumes this attitude to his patients, and the result is a successful manual.

NARROW JAWS AND ARCHED PALATES.

DEFORMITIES of the jaws and palate are extremely common among members of the civilized European races; the narrow pointed dental arch, the Gothic highly-arched palate, and the under-developed lower jaw, appear to be so particularly associated with adenoids that it is natural to suppose that the nasal obstruction is a direct cause of the deformity. It is easy to build up a theory of how the alteration of stresses set up by an habitually open mouth produces the alteration of shape, of how, when the mouth is closed, the tongue exerts a suction on the palate and an outward pressure on the sides of the dental arch, and of how, when the mouth hangs open, the cheeks press inwards on the molar teeth. It is, too, a simple matter to assume that the highly arched palate allows insufficient room for the growth of the nasal septum, which accordingly becomes bent.

In a monumental work on growth and deformity of the jaws and nasal septum Dr. GUSTAV FRANKE[3] has published the results of a most thorough and elaborate series of measurements of jaws and palate, and his observations go far to destroy these fascinating theories. For instance, he finds that highly arched palates are very little narrower than normal ones; at various ages the height is increased by 3 to 3.9 mm., but the width only diminished by 0.4 to 1.1 mm.; he concludes, therefore, that this deformity cannot be caused by lateral pressure on the jaws. As to deviations of the nasal septum, Franke finds that these are often visible even in foetal life; he believes that the majority are not due to traumatism, because in his examination of a large number of skulls he has often found healed fractures without deformity, and because he has found severe deflections without trace of injury; and he points out that fractures of the cartilage can only unite by fibrous tissue, and are therefore permanently recognizable. Also, although septal deviations are common in skulls with narrow jaws and high palates, he gives reasons for believing that they do not stand in a direct causal relationship; in his opinion deformities of the septum are caused by lack of space for its growth due to a general underdevelopment of the upper jaw and flatness, or "pugging," of the face. All these deformities are the result of a lack of stimulus to growth which results from insufficient use of the jaws in mastication, because the civilized races eat only soft food, and the reason that these deformities are especially related to mouth-breathing is simply that the subjects of nasal obstruction chew their food even less than the normal civilized man.

Dr. Franke has perhaps paid too little attention to a possible racial tendency to "pugging"; but this is a factor which cannot be measured, unless the entire race would revert to the diet of our primitive ancestors, so that it might be seen whether the new generation would arise free from these deformities. Dr. Franke's work is suggestive and painstaking; almost too painstaking indeed, for his main arguments are overlaid by a mass of detail and of references to other workers.

ANATOMICAL NEUROLOGY.

A THOROUGHLY satisfactory work on the *Anatomy of the Nervous System*[4] would be a book on the one hand accurate enough in detail to satisfy the most exacting neurologist, and on the other sufficiently clear and simple "to be understanded of the people." Such a book has been written by Professor RANSON of Chicago. This work, we feel sure, will be accorded a warm welcome by both student and teacher. The author demonstrates the old truth that he who is most master of his subject can, if he avoids elliptical argument and allusion, write of difficult things in the simplest manner.

The author's conception of the teaching of neurological anatomy is that, in order to make the subject sufficiently alive, it is essential that the study of structure should walk hand in hand with the study of function. So well have the two been interwoven here that the book might well have been given a physiological title. The study of the tracts of the cord, of the structure of the mid- and hind-brains, is thus made a living thing. Moreover, where knowledge is as yet imperfect, the facts are clearly and judicially stated. The account of the cranial nerves is singularly well done, a profusion of simple diagrams making the crooked ways of the nuclei of origin and terminations clear and understandable. The most difficult section of all, the anatomy of the cerebellum in relation to function, is something of a test chapter. The work of Elliot Smith, Ingvar, and Bolk is related, the author maintaining a neutral attitude towards the question of localization of function within the cerebellum. The chapter on the sympathetic nervous system is too short, and might be improved by more reference to pathological physiology. Presumably the question of the liaison between this system and the endocrine glands was deemed too purely physiological for inclusion.

The book is admirably produced, and the simple drawings are most commendable. There is a good index.

BOWEL DISEASES IN THE TROPICS.

SIR LEONARD ROGERS'S *Bowel Diseases in the Tropics*[5] represents two of his previous works, revised and rewritten—namely, that on cholera and its treatment and that on dysenteries. The new volume is a companion to his well known work on *Fevers in the Tropics*, and bears the same impress of authority and wide experience. The first two hundred pages are given to cholera, and contain amply documented accounts of its history, epidemiology, etiology, morbid anatomy, clinical aspects, and treatment. The author's own methods of treatment, evolved in the course of treating over two thousand carefully observed and recorded cases during twelve years' work at Calcutta, are fully detailed. They consist, as is well known, primarily in the use of hypertonic saline injections at the critical moments, and have resulted in a reduction of the death rate to one-third of what it was before their employment. He is convinced that opium in all its forms is injurious in cholera, once the typical colourless motions have set in.

The second part of the volume deals with dysenteries and liver abscess on similarly broad lines and with equal fullness; in particular the employment of emetine in amoebic dysentery and the often associated amoebic hepatitis or liver abscess, first advocated by the author in 1912, is set out in all detail.

The book gives a singularly complete account of the diseases with which it deals, is clearly written, and abounding in the practical hints and directions that are so important to the practitioner who has to treat patients. The illustrations are excellent and the volume is adequately indexed. It should be in the hands of all medical men resident abroad, and be studied by all interested in tropical diseases.

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[2] *Clinical Surgical Diagnosis for Students and Practitioners.* By F. de Quervain. Third English edition, translated from the seventh German edition by J. Snowman, M.D. London: J. Bale, Sons and Danielsson, Ltd. 1921. (Roy. 8vo, pp. 930; 731 figures, 7 plates. 50s. net.)

[3] *Über Wachstum und Verbildung des Kiefers und der Nasenscheidewände, auf Grund vergleichender Kiefermessungen und experimentelles Untersuchungen über Knochenwachstum.* Von Sanitätsrat Dr. Gustav Franke. Leipzig: Curt Kabitzsch. 1921. (Sup. roy. 8vo, pp. 205; 20 plates; 4 figures. M.120; bound, M.150.)

[4] *The Anatomy of the Nervous System from the Standpoint of Development and Function.* By S. W. Ranson, M.D., Ph.D. Philadelphia and London: W. B. Saunders Company. (Double cr. 8vo, pp. 395; 260 figures. 32s. 6d. net.)

[5] *Bowel Diseases in the Tropics: Cholera, Dysentery, Liver Abscess, and Sprue.* By Sir Leonard Rogers, C.I.E., M.D., F.R.C.P., F.R.C.S., F.R.S., I.M.S. (retired). Oxford Medical Publications. London: H. Frowde, and Hodder and Stoughton. 1921. (Demy 8vo, pp. xvi+475; 10 plates, 50 tables, 3 diagrams, 2 charts. 30s. net.)

ORGANIC CHEMISTRY.

MR. HAMMICK'S *Introduction to Organic Chemistry*[6] is a well-written little laboratory book for use by junior students of chemistry who already have a knowledge of the simpler methods of organic laboratory practice. It is not designed to meet the claims of any particular examination syllabus, but its fourteen chapters and round gross of experiments seem enough to furnish the student with a sound working knowledge of organic chemical structure, notation, and technique. The word "*affinas*" on page 116 should read "*affinis*." The book contains a great deal of information useful to the student of chemistry, and may be recommended to him.

The second edition of Professor STEEL'S *Laboratory Manual of Organic Chemistry for Medical Students*[7] is an unusually good type of practical handbook, for the author has kept in mind the particular variety of organic chemistry that is likely to be of service to medical students in the later stages of their curriculum. He has added to this edition an excellent chapter of experiments in colloid chemistry that should be of great help in clarifying the ideas of the student; for colloid chemistry, by this time a well-explored kingdom, is a subject with which he is usually but little acquainted. The text in this volume is confined to the left-hand pages; the right-hand pages are left blank for notes and records of experiments.

Mr. MACBETH'S short handbook of *Organic Chemistry*[8] is based on his course of lectures to his pupils, and is designed to fill the wants of medical, pharmaceutical, and intermediate science students. It is clearly written and practical in its treatment, and examination questions are set at the ends of the chapters. The book may be recommended to those for whom it is designed.

THERAPEUTIC NOVELTIES.

MERCK'S annual reports,[9] which have appeared regularly since 1887, give short abstracts of the experimental and clinical papers, published during the year under review, which deal with the more important therapeutic novelties. These reports are a boon to anyone who wishes to investigate the action of a new drug, for they provide an up-to-date account of the work which has been done upon the subject; information can be obtained from them in a minute to find which, without their help, would require hours of tedious work.

The present issue deals with two years: about 500 drugs are reported upon, and 1,300 references are given to articles in 200 different journals published in 17 different countries in about 10 different languages. These figures indicate the industry and care with which the medical literature of the world has been searched. They are, however, rather appalling, when we reflect that they only represent a fraction of the output of therapeutic literature in two years. A special article is devoted to the therapeutic use of the benzyl derivatives (80 references); these substances were introduced by Macht, who is credited with having written twenty-one papers on them in four years; benzyl-benzoate, the best known of these substances, is recommended for all forms of spasmodic contraction of plain muscle. Silver-salvarsan (about 60 references), and protein therapy (about 50 references), are two other subjects of particular importance which are dealt with very fully.

The report consists of highly condensed summaries of an enormous mass of literature, and it is natually impossible to give any general account of the book, except to say that it contains an account of all the well-known therapeutic novelties, and that the references appear to be very complete. The exact value of the bulk of the literature so carefully collected in these reports appears, however, to be a little doubtful, for in the case of every drug every observer appears to have got uniformly successful results. The various remedies reported upon cover practically every known disease, and they all appear to be infallible remedies, yet vital statistics assure us that people continue to die from causes other than old age.

[6] *An Introduction to Organic Chemistry.* By D. Ll. Hammick, M.A. London: G. Bell and Sons, Ltd. (Cr. 8vo, pp. viii+258. 6s. net.)

[7] *A Laboratory Manual of Organic Chemistry for Medical Students.* By M. Steel, Ph.D. Second edition, revised and enlarged. New York: J. Wiley and Sons, Inc. London: Chapman and Hall. (Demy 8vo, pp. 295; 2 figures. 9s. 6d net.)

[8] *Organic Chemistry for Medical, Intermediate Science, and Pharmaceutical Students.* By A. Killen Macbeth, M.A., D.Sc., F.I.C., etc. London: Longmans, Green and Co. (Cr. 8vo, pp. 246. 6s. 6d. net.)

[9] *E. Merck's Jahresberichte ueber Neuerungen auf den Gebieten der Pharmakotherapie und Pharmazie.* 1919-1920. XXXIII und XXXIV Jahrgang. E. Merck, Chemische Fabrik, Darmstadt. (Small 8vo, 366 pages. M. 18.)

NOTES ON BOOKS.

THE eighth edition of Professor HARE'S *Symptoms in the Diagnosis of Disease*[10] is an excellent book for the medical student who wishes to learn how to employ his eyes, ears, and hands to the best advantage in examining patients. The author omits laboratory methods, and has endeavoured to write a book that will enable the recognition of symptoms and physical signs to lead to a diagnosis. The first six chapters are given to the face, arms, legs, hemiplegia, speech, and the skin; then follow chapters on the mouth and tongue, abdomen, bowels, thorax, pulse, urine, and eye. The rest of the book is given to various important symptoms. The text is dogmatically written, and is helped out by a number of excellent illustrations; in many ways old-fashioned, the book yet contains a great deal of sound practical teaching.

Professor BIRK'S guide to the diseases of children[11] is a companion volume to his book on the diseases of infants, and is addressed to students and practitioners of medicine. The author describes spasmodic asthma as rare in children, does not mention its connexion with food poisoning, and remarks that it will disappear as the child grows older. Other examples of the author's failure to do justice to his subject might be quoted; the book is not one that we feel able to recommend.

Golden Rules for Dental Mechanics,[12] a small volume prepared by Mr. HAROLD OSBORN, a member of the Society of Chemical Industry, is an excellent little book, containing many valuable and accurate notes for dental mechanics; it will be of interest also to dental students. We have noted some inconsistencies: on the first page the author gives in ounces the proportion of plaster-of-Paris and water that should be used in order to obtain the greatest strength in a plaster cast, but on page 20 he modifies this by saying that the plaster should be mixed as stiff as it can properly be worked. He would have done better to adhere to his original statement. In another place he says that sticky wax should always be removed with a spatula, and that heat or boiling water should not be used. We doubt whether it is always possible to remove wax with a spatula, and know no reason why heat should not be used.

A new edition has appeared of Dr. ERICH WOSSIDLO'S *Kystoskopischer Atlas,*[13] first published about a year ago. Advantage has been taken of the publication of this new edition to make certain slight additions. The most important of these is the inclusion of some new coloured plates which have thereby been increased in number from thirty-four to forty-two. They illustrate not so much new types of disease as variations of bladder conditions that have already been represented. Alterations have also been made in the text, and new diagrams added to illustrate the section on the optics of cystoscopy.

MR. JOBLING'S *Catalysis and its Industrial Applications*[14] is a well-written little book. Catalytic agents are of importance in a great many industrial processes, and of late years their modes of action have been studied with no less profit than care. The volume may be recommended to all who are interested in the scientific side of industrial manufacture.

Dr. JOLTRAIN'S little book on plague[15] gives an account of the epidemiology of the disease, its connexion with the rat, and of its symptoms, treatment, and prophylaxis. It is written for the use of medical practitioners, and contains all that is necessary in an elementary handbook.

[10] *Symptoms in the Diagnosis of Disease.* By H. A. Hare, M.D., B.Sc. Eighth edition, thoroughly revised. London: H. Kimpton. (Roy. 8vo, pp. 574; 195 figures. 36s. net.)

[11] *Leitfaden der Kinderkrankheiten, für Studierende und Ärzte.* Von Professor Dr. W. Birk. Bonn: A. Marcus and E. Webers. (Roy. 8vo, pp. 546; 10 figures. M.25; bound, M.31.)

[12] *Golden Rules of Dental Mechanics.* By H. Osborn. Bristol: J. Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent, and Co. 1921. (3½ × 5½, pp. 95. 5s. net.)

[13] *Kystoskopischer Atlas.* By Dr. med. E. Wossidlo. Second edition. Leipzig: W. Engelmann. 1921. (Demy 4to, pp. viii + 98; 41 figures, 42 plates. M.160; bound, M.195.)

[14] *Catalysis and its Industrial Applications.* By E. Jobling, M.C., A.R.C.Sc., B.Sc., A.I.C. Second edition. London: J. and A. Churchill. (Cr. 8vo, pp. 151; 12 figures. 7s 6d. net.)

[15] *La Peste: Etiologie, Formes Cliniques, Prophylaxie et Traitement.* By E. Joltrain. Paris: A. Maloine et Fils. 1921. (Cr. 8vo, pp. 184; 15 figures. Fr. 8.)

A full account of the diagnosis and treatment of gastric and intestinal disorders is given in the third edition of Professor AARON'S *Diseases of the Digestive Organs*,[16] a book that may be recommended to medical practitioners and specialists alike. The author writes in a practical spirit, and the book is not overloaded with scientific detail; the highly important subject of diet receives adequate treatment throughout, although it is described from the American rather than the European point of view. The volume is well printed and many of the illustrations and coloured plates are excellent.

Dr. MCCAW'S *Aids to the Diagnosis and Treatment of Diseases of Children*[17] has reached a fifth edition. It is a well-written and fairly complete little volume that may be recommended to medical students in search of a small volume on the subject with which it deals.

The Boy in Industry and Leisure[18] is the second volume in "The Social Service Library," and is intended primarily for the guidance of the social worker whose sphere of activity lies amongst those boys whose home influences, school life, circumstances or environment leave a gap that can be filled only by the social worker. The book describes how such boys can best be helped through a critical period of their development, and ends with an appendix containing much information as to the various schemes and agencies designed for their assistance. The author is particularly well fitted for the composition of such a volume as this, and it should be of great service to all interested in the welfare of the potential hooligan.

X RAYS, LIGHT, AND ELECTRICITY.

Dr. VOLTZ'S volume on the physical and technical bases of *x* ray measurement and dosage[19] gives a general account of the subject, written for the information and instruction of medical men who make use of *x*-ray therapy. The treatment is theoretical rather than practical; the reader feels that somewhere within the bundle of hay there is a needle, or possibly more than one. For ourselves, we confess that we have not found it.

A pamphlet by the same author on dosage tables for *x*-ray therapy[20] is an exposition of a theory of quantitative *x*-ray dosage he has based on Seitz-Wintz's system of biological measurement. It is meant for the use of experts in *x*-ray therapy.

The seventh edition of BACH'S book on treatment by the quartz lamp[21] is divided into two parts. The first deals with the use of the apparatus described, the second gives an account of the indications for its employment in disease. The book is practical, and gives perhaps an optimistic account of what may be expected from light treatment. It will be consulted by specialists.

Dr. GASSUL'S pamphlet on the significance of different rays for the diagnosis and treatment of tuberculosis[22] gives a summary of the literature dealing with the use of Roentgen rays in tuberculosis, and the success with which sunlight, various forms of artificial light, radium and the like, have been employed in its treatment. Details of these forms of treatment are not given; the author calls for further research in this promising therapeutic field.

The sixth edition of COHN'S outlines of electrodiagnosis and electrotherapy[23] is a book written for students and practitioners of medicine, and contains a full and practical account of the subjects with which it deals, adequately illustrated. It appears entirely suitable for the use of medical men resident in Germany.

[16] *Diseases of the Digestive Organs, with Special Reference to their Diagnosis and Treatment.* By C. D. Aaron, Sc.D., M.D., F.A.C.P. Third edition, thoroughly revised. London: H. K. Lewis and Co., Ltd. 1921. (Roy. 8vo, pp. 904; 13 plates, 164 figures. £2 10s. net.)

[17] *Aids to the Diagnosis and Treatment of Diseases of Children.* By J. McCaw, M.D., R.U.I., L.R.C.P.Edin. Fifth edition. London: Baillière, Tindall and Cox. 1921. (Fcap. 8vo, pp. xii + 404. 6s. net.)

[18] *The Boy in Industry and Leisure.* By the Rev. R. R. Hyde, Director of the Industrial Welfare Society. London: G. Bell and Sons, Ltd. 1921. (Cr. 8vo, pp. 309. 6s. net.)

[19] *Die physikalischen und technischen Grundlagen der Messung und Dosierung der Röntgenstrahlen.* Von Dr. rer. nat. et phil. F. Voltz. VI. Sonderband zu "Strahlentherapie." Berlin and Vienna: Urban and Schwarzenberg. 1921. (Sup. roy. 8vo, pp. 307; 173 figures. M. 96.)

[20] *Dosierungstafeln für die Röntgentherapie.* Von F. Voltz. Munich: J. F. Lehmann. 1921. (Cr. 8vo, pp. 94; 16 figures. 5s.)

[21] *Anleitung und Indikationen für Bestrahlungen mit der Quarzlampe.* By Dr. H. Bach and others. Seventh edition. Leipzig: C. Kabitzsch. 1921. (Roy. 8vo, pp. 166; 16 figures. M.40; bound, M.48.)

[22] *Die Bedeutung der verschiedenartigen Strahlen für die Diagnose und Behandlung der Tuberkulose.* Dr. R. Gassul. Leipzig: G. Thieme. 1921. (Roy. 8vo, pp. 80; 2 charts. M.30.)

[23] *Leitfaden der Elektrodiagnostik und Elektrotherapie.* Von Professor Dr. T. Cohn. Berlin: S. Karger. (Sup. roy. 8vo, pp. 232; 72 figures, 5 Tafeln. M.30.)

MEDICINAL AND DIETETIC PREPARATIONS.

Salicylosol.

SALICYLOSOL is a solution of salicylic acid in a partly-oxygenated mineral oil. It is stated to contain 10 per cent. salicylic acid. Analysis in the laboratory showed 10.5 grams salicylic acid per 100 grams of solution. The oil has little taste when given by mouth. The manufacturers claim that it produces no nausea or other symptoms of gastric irritation such as follow the employment of sodium salicylate. This point has not been tested by us, but Hanzlik[1] tested the toxicity of various salicylate compounds on 400 patients and found that none possessed any advantage in this respect over sodium salicylate. Hanzlik found that toxic symptoms appeared on an average after a total of 200 grains (13 grams) of sodium salicylate had been given; this would correspond to about 4 oz. (115 c.cm.) of salicylosol.

Salicylosol is specially recommended for administration by the skin, and it is stated that when exhibited in this manner the physiological effects of the drug can be obtained without the undesirable effects which may attend administration of salicylates by the mouth. Impens[2] found that from 10 to 16 per cent. of the salicylic acid rubbed into the skin appeared in the urine. When 10 c.cm. of salicylosol (= 1 gram salicylic acid) was massaged into the skin we found that 0.137 gram appeared in the urine in 24 hours. Hanzlik[3] found that a normal person excreted 40 per cent. of a dose of salicylate given by mouth in twenty-four hours. The absorption of salicylic acid from inunction is therefore only about one-third of the absorption of salicylic acid given by mouth.

From these data it follows that to produce a full therapeutic effect in a case of rheumatic fever by inunction of salicylosol it would be necessary to rub in about 12 oz. of salicylosol in forty-eight hours; it seems doubtful whether this is practicable. The therapeutic use of salicylosol appears therefore to have certain limitations which are not fully realized by the manufacturers. Salicylosol would seem, however, to be an excellent preparation for inunction, as it contains five times as much salicylic acid as the official salicylic ointment (*B.P.*), and when administered by inunction does not irritate the skin. The penetrative power of salicylosol compares very favourably with that of other salicylic preparations whose power of penetration has been recorded.

The agents are Messrs. E. T. Pearson and Co., London Road, Mitcham, Surrey,

Iodinosol.

This is a non-irritant non-staining preparation of iodine in a base similar to that used in salicylosol. It is prepared in two strengths, 6 per cent. and 10 per cent. On analysis the 6 per cent. preparation was found to contain 6.5 gram iodine per 100 gram solution.

Iodinosol is an excellent preparation for inunction, as it is non-irritant, and when completely massaged into the skin produces no staining of the skin or of the clothes. When administered by the mouth it produces slightly irritant effects like other preparations containing free iodine.

The proprietors state that "a small quantity of iodinosol 6 per cent. may be rubbed into the region of the median vein, and fifteen to thirty minutes afterwards the presence of iodine in the urine can be shown by the usual test methods"; and that "in a word, it can be administered in every instance where potassium iodide, internally or externally, is indicated." We are not able to confirm these statements from our own observations. We found that thorough inunction of 10 c.cm. of iodinosol in man produced no excretion of iodine in the urine in the succeeding twenty-four hours. On the other hand, the administration of 0.01 gram KI by mouth or of 0.5 c.cm. iodinosol by mouth produced demonstrable quantities of iodine in the urine. These results agree with the observations of Wetzel and Sollmann[4] and of Kniepf,[5] who found that inunction of a large variety of iodine preparations produced no excretion of iodine in the urine.

A large number of workers have studied the absorption of iodine by the skin, and their results are curiously discrepant, but in general it appears that inunction of non-irritant iodine ointments produces little or no absorption of iodine in man,

[1] Hanzlik: *Journ. Amer. Med. Assoc.*, 1913, lx, p. 957.
[2] Impens: *Pflüger's Archiv.*, 1907, 120, p. 1.
[3] Hanzlik: *Journ. Pharm. and Exp. Ther.*, 1916, 9, p. 217.
[4] Wetzel and Sollmann: *Journ. Pharm. and Exp. Ther.*, 1920, 15, p. 169.
[5] Kniepf: *Therap. Halbmonats.*, 1220, 34, p. 382.

although a considerable absorption may occur if strong iodine ointments are left in contact with the skin for long periods. It seems certain, however, that it is unsafe to rely upon sufficient iodine being absorbed by the skin to produce the general therapeutic effects of iodides.

The claim by the manufacturers that "Iodinosol is all absorbed promptly, thus ensuring prompt action and enabling the prescriber to regulate the dose of iodine to a decimal point of a grain," does not accord with our observations.

The agents are Messrs. E. T. Pearson and Co., London Road, Mitcham, Surrey.

A Simple Aspirator.

WITH reference to the description by Dr. H. O. Gunewardene of an aspirator, published in the BRITISH MEDICAL JOURNAL of January 21st, p. 109, Dr. J. Ashforth (Woodlands, near Doncaster), writes that he has used a similar combined aspirating syringe and trocar, supplied by Messrs. Pettie and Whitelaw, of Aberdeen and Dundee, which he considers possesses advantages over that mentioned by Dr. Gunewardene, since no rubber tubing is required, and the whole apparatus is of metal, easily detachable and convenient to sterilize.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

THE CARE OF THE CAR IN WINTER.

In view of the large number of medical men who nowadays look after their cars, in whole or in part, and of the apparent change from an unprecedented spell of mild weather to the normal temperatures of winter, a few hints may be helpful. This is a season in which it behoves the owner to note the degree to which the motor-house is exposed. If it is facing due north, or east, and there is no warm compartment near it, because of the rapid changes of temperature likely to be experienced at this period, it is well to consider methods of artificial heating, or, alternatively, to make a practice of draining the water out of the radiator and cylinder jackets every night. The latter is a laborious course that occupies a considerable amount of time, particularly as the water has to be replenished in the morning. It is therefore in the nature of a last resort. Should the motor-house be sheltered from the coldest quarters, or built beneath a dwelling-place, such as a coachman's quarters, it will generally be unnecessary either to heat the garage artificially or to drain the water out of the cooler. In the case of the owner-driver I should always advise putting the car backwards into the garage in the summer months, then it stands conveniently for starting by hand. In any case, the minimum time is lost in getting away. By contrast, in cold weather the vehicle should be driven straight in and left so standing that it has to be backed out. Thus the vital parts will be farthest from the draught that can sweep in under the doors. But if there are no dwellings near the motor-house the question of artificial heating may require consideration.

A Simple Scheme for Occasional Heating.

Sometimes the simplest arrangements will suffice. It is not always necessary to install elaborate heating apparatus, particularly in face of the fact that such procedure may occasion trouble of the red-tape sort with the local authorities; also it may affect the fire insurance of the car. Some years ago, for two or three winters, I found the occasional use of an untipable paraffin lamp, costing 1s., sufficient for the purpose, even in a garage at a relatively high altitude in a very cold county. Once filled, one of these lamps will burn for the best part of twelve hours. If it is put on the ground it will introduce considerable extra warmth into the ordinary coachhouse, even when the door is ill constructed and admits a draught at ground level.

When, however, there is no course but to drain the water system, one point should be had in mind in particular: after all the liquid has come away from the taps at the base of the cylinder casting and the cooler, the engine should be run a few moments to enable the water circulating pump to expel any liquid in its neighbourhood. Many a case has occurred in which the owner has imagined he has expelled all the water from an engine system but has found subsequently that the mechanism has burst in the neighbourhood of the pump through the freezing of water that had accumulated and not been drained away. This can be obviated by the simple method of running the engine for a few moments after the water circulation system has apparently drained itself empty by mere gravity. Usually the amount of petrol remaining in the pipe from the tank to the carburetter after the tap has been turned off will suffice to run the engine long enough for the purpose. Nor let anybody fear that running the engine in such circumstances in cold weather will cause difficulties. There is no such danger provided the lubrication system is adequately supplied with undiluted oil of the right grade. Whenever the water has been drained off, on preparing the car for use again hot filtered water should be used in preference to ordinary cold water. For one thing, that will vastly facilitate starting-up the engine.

Aids to Starting.

Much remains to be done in the way of making cars easier to start in cold weather. When hand cranking was the rule more attention used to be given to this matter, despite the fact that, the further back we go, proportionately the easier engines were to start. On the one hand, in the pre-war period the quality of the fuel was better than the average available to-day, and, on the other, the compressions used for standardized car engines were lower, therefore it was not necessary to crank them as fast to get a start as is essential with post-war designs. Since the coming of the mechanical engine-starter, however, the need for easy starting has been largely overlooked, with the result that great burden is placed on the battery, and often much trouble results. By letting the mechanical engine starter turn the crankshaft for many seconds at a time without the mixture being fired, fuel may pass the pistons and, falling into the base-chamber, dilute the lubricating oil. Experiments recently carried out by an American manufacturer who had frequent troubles of this kind are reported to me privately to have shown that thirty seconds of cranking with a mechanical engine-starter, and with the throttle closed, resulted in half a pint of fuel flowing by the pistons into the crank case. Four cranking periods of this duration each day would thus result not only in wasting a quart of fuel, but a serious dilution of the lubricating oil, with all its grave risks. Such a case, however, must be regarded as altogether exceptional. But it is useful to have it in mind as an indication of a very prevalent source of trouble which may be experienced, in less degree, by any motorist. The better the construction the more important it is that no foreign matter should get mixed with the lubricant. A quarter of a pint of foreign liquid in the base chamber of some engines would be sufficient to render the best lubricant quite incapable of doing its work.

When and How to Use Aviation Spirit by the Cupful.

A large percentage of cars are kept in unheated motor-houses, or are allowed to stand in front of doors for long spells during which the engine becomes cold. The higher the compression of the power plant the more rapidly the crankshaft has to be turned to have a chance of starting. Moreover, as there is every prospect that the fuels which will be supplied for service in cars will not tend to improve in quality, the importance of obtaining a quicker average start, as well as of controlling the cooling system whereby the engine temperature can be warmed up promptly to the degree required for correct operation, is worthy of study. While these problems largely concern the motor engineer and car builder, the medical man can do much to assist and protect himself in this connexion. For example, the use of radiator masks is now well understood in this country, particularly by doctors. Quilted masks are probably the best sort for medical men. It is not necessary, however, that the covering should extend over the whole of the bonnet; the important part is the radiator.

In regard to starting the engine from cold, a great many cars are equipped with carburetters a feature of which is that the undoing of two nuts, or even the sliding of a finger sideways, exposes the float chamber. All carburetters ought to have a drain tap at the base. All users ought to turn off the petrol tap when the vehicle is needed no longer. A good practice to ensure the best possible start in cold weather is to turn off the tap at the end of the day, and run the engine until the fuel in the carburetter is exhausted. On going to start the car up next day the fuel tap should still be left turned off. A tin of aviation spirit should be kept in stock. When needed a small bottle is filled with this spirit, and a little is poured into the float chamber, the top of which should then be put on promptly and the throttle left in the usual position for starting. By means of this best grade spirit it should be possible to get a very ready start by hand, or by means of the electric gear, in

the worst of weather, for this fuel is equal to the best pre-war motor car petrol. As soon as the engine gets going, the fuel tap can be turned on. Thus there will be a gradual mixture of this spirit with the other, and, by the time the blend is used, the engine will be sufficiently warm for the ordinary fuel to serve the purpose. When the carburetter is inaccessible, it may pay to fit a quarter-gallon supplementary tank under the bonnet and a short pipe with a two-way cock connected with the main fuel pipe, whereby, for starting, aviation spirit can be used. No car should be started on benzol in cold weather.

How to Set Out.

The radiator hood should be kept on until the engine is at its full working temperature. Sometimes this will mean a quarter of an hour's going in really cold weather. It will make for petrol economy, as well as give a much better pick up. The habit of putting the accelerator full down when the engine begins running is not to be recommended. It leads to unnecessary waste of fuel through imperfect combustion and involves the grave risk of unburnt fuel getting past the pistons into the lubrication system. A tin of aviation spirit used in the way I indicate, even if some of its contents be employed twice a day—as, for example, to start the car after it has been idle for several hours in the middle of the day—will, nevertheless, last one through the best part of a winter. Indeed, as in this way a quicker start is achieved, it is an actual net saving, because less fuel is passed wastefully through the engine system before the gas begins to fire. Therefore the method is both satisfactory and cheaper. Once a modern engine is running it is easier to warm than older types, because the carburetter intake pipe of most latter day constructions is water-jacketed, or a "hot spot" system is used, consequently as soon as the water begins to increase in temperature the vaporization of the fuel is achieved more perfectly and more readily. The degree of heat necessary for vaporization may be obtained by the use of an electrical heating element, as in the system pioneered by Cadillac, or by burning a small amount of fuel. Primers using fuel which is easily vaporized even at quite low temperatures have also been employed with satisfaction in some instances, but are scarcely general on the home market. Moreover, one scarcely advises the introduction of apparatus of this sort by individuals. Rather should such developments be looked for in the direction of devices standardized by manufacturers on cars as a result of their own necessarily extensive and prolonged experiments. Probably all devices, or systems, used to aid in starting an engine have certain drawbacks as well as points of advantage. The need for a simple, dependable, and inexpensive device for this purpose, such as can be standardized by all makers, is becoming increasingly evident, particularly as fuel is made less and less volatile. Meantime, most car users will find they can get on well enough by the use of one or other of the foregoing hints.

THE SCHOOL MEDICAL SERVICE.

ADDRESS BY SIR GEORGE NEWMAN.

THE special course of instruction for the school medical service which has been arranged at the London Hospital [1] was opened on February 1st with an introductory address by Sir GEORGE NEWMAN, Chief Medical Officer to the Ministry of Health and the Board of Education. The chair was taken by Lord DAWSON, who explained that the course was not only for school medical officers but for those who intended to combine general practice with work at the school clinics on a part-time basis.

Sir GEORGE NEWMAN said that the course was an experiment. Its first purpose was to draw the attention of school medical officers and assistant officers to the clinical aspects of their work. There were now 300 whole-time school medical officers and 500 whole-time assistant officers, and the difficulty always in such administrative posts was to retain the clinical spirit. The second purpose of the course was to help general practitioners to understand a little more fully what the school medical service was and involved. When school medical inspection started many general practitioners misunderstood the situation. Some thought that child patients were being taken from them, which was not the case; others that they themselves ought to do the inspection, and they were invited to do it but found it impracticable. Under this service over two million children were medically inspected annually in the 22,000 public elementary schools, so that the entire population of school age was covered every three years. Children found to be defective were referred in the first instance to general practitioners, and tens of thousands of children were now receiving treatment from such practitioners. There were certain conditions, however, which the private practitioner did not want to treat because treatment was too tedious or for other reasons could not well be integrated into ordinary practice. These were eye cases, ear, nose and throat cases, skin complaints, minor ailments, and dental cases, which five branches of treatment had therefore been referred to hospitals and special clinics. Sir George Newman hoped that the course would be a means of drawing attention to the importance of studying disease in the child. From the medical aspect children's diseases were important because they were the beginnings of all disease; from the social aspect, because if the problem of the child's health were solved, the problem of the national health would adjust itself. The great body of infections, for instance, which began in childhood laid the basis for future constitutional weakness. Another line of study concerned those infant diseases which were carried on into school age. Of the children who came to school at 5, approximately 37 per cent. were suffering from some physical or mental defect. A task before the school medical service was so to differentiate the conditions found in children between the ages of 5 and 14 as to determine what it was below the age of 5 which prepared the child's body for subsequent disease. Then it was necessary to study the causes of infant mortality, which was the most sensitive index to the health of the community, more so than the general death rate. Finally, the school medical service, which was the logical outcome of compulsory education, must be closely co-ordinated with the public health service. It had been too long assumed that the public health service was mainly concerned with environment. The essential element in preventive medicine was the person, and it was from environment to the person that the centre of gravity in the public health service must gradually but steadily shift. The relation of morbidity returns to environment was indirect; their relation to the habits and practices of the individual was direct.

Sir George Newman went on to emphasize the fact that the school medical service was an instance of local autonomy. It was the responsibility of the 318 local education authorities, and the function of the central government was to supervise and to secure a measure of uniformity. The service started with inspection. Originally they were pressed to make the inspection of an elaborate anthropometric character, preparatory to a complete physical survey of the English people; but this was turned down because the examination of each child would have taken from thirty to sixty minutes, and might have irritated the child and have been misunderstood by the parents. The present inspection could be carried out in from four to seven minutes. The parent still had the right to refuse to have his child inspected, but the percentage of objections, never high, was now at vanishing point. Next came medical treatment, rendered necessary not only in the case of the five classes of ailments and defects just mentioned, but in the case of families who had no medical attendant to whom the children could be referred. The clinics now numbered 900.

He thought it an advantage to have whole-time officers to undertake inspection, but he was equally persuaded that for medical treatment there were great advantages in having part-time doctors who were practising clinical medicine and surgery in the district. The Government had done its best to encourage local authorities to staff their clinics on this principle; long before it became statutory for the local authority, in making provision for medical treatment, to consider how far that treatment could be provided by the private practitioners of the area before setting up any distinct machinery, that had been the policy of the Board of Education. There were at present under local authorities 730 general private practitioners at work in the school service, not to mention others in institutions. In conclusion Sir George Newman sketched briefly some of the other elements in the school service: the provision of special schools for defectives and of sanatorium schools, school meals for the ill-nourished, physical training, and the teaching of personal and school hygiene.

[1] See BRITISH MEDICAL JOURNAL, January 7th, 1922, p. 27.

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SATURDAY, FEBRUARY 11TH, 1922.

THE DESTRUCTION OF VITAMINS.

THE two facts of greatest practical importance about vitamins are, first, that a certain minute supply of these substances is essential for animal life, and secondly, that they are very easily destroyed. It is most necessary to bear this second characteristic in mind, for the actual existence of vitamins can only be demonstrated by the disastrous effects produced by their absence from the diet or their presence in it in insufficient quantities; indeed, since vitamins occur naturally in nearly all fresh foodstuffs, it is probable that their existence would never have been suspected had they not been such unstable bodies.

As we have indicated in a recent article,[1] an abundant supply of vitamins exists in all fresh vegetable foods, and considerable quantities occur in milk and in meat, provided that the latter are obtained from animals fed on fresh foods. A normal adult living on an ordinary diet containing a reasonable proportion of fresh vegetables is, therefore, certain of obtaining a plentiful supply of vitamins. Unfortunately, these indispensable food constituents are, as has been said, very readily destroyed. All three vitamins are rapidly destroyed by heating in the presence of air or oxygen. Hopkins showed that the fat-soluble vitamin A in butter was completely destroyed by heating the butter to 120° C. for four hours if oxygen was bubbled through the butter, although practically no destruction occurred if the butter was heated without aeration. The experiment established the important fact that this vitamin, though fairly resistant to heat, is readily destroyed by oxidation. Zilva found that the antiscorbutic vitamin C was completely destroyed by boiling for an hour in the presence of oxygen, but that no destruction occurred when it was boiled for two hours in an atmosphere of carbon dioxide. The destruction of vitamins depends largely upon the length of time for which they are heated in the presence of air. Hess, for instance, showed that little destruction of vitamin C occurred when tomatoes were heated to 100° C. for fifteen minutes, but that four-fifths of the vitamin was destroyed when the tomatoes were heated to 100° C. for an hour. Similarly, it has been shown that a greater destruction of the vitamin C present in fresh milk occurs when it is heated to 60° C. for half an hour than when it is boiled for a minute. The reaction of the fluid containing the vitamin is also of importance, for vitamins are much more readily destroyed in an alkaline than in an acid fluid. The fluid need only be feebly acid. The antineuritic, water-soluble vitamin B is more resistant than vitamin C, but it also is readily destroyed by boiling in an alkaline fluid in presence of air.

A fair proportion of all three vitamins in fresh vegetables appears to survive ordinary cooking, but prolonged boiling, such as occurs in making stews, destroys nearly the whole of vitamin C, and probably most of vitamin A and B. The vitamins in milk are unfortunately very unstable; ordinary pasteurization destroys practically the whole of vitamin C, and a considerable amount of vitamin A.

The extraordinary difficulty of retaining vitamins in preserved foods is in large measure due to the fact that vitamins slowly oxidize on keeping. Vitamin A is the easiest to preserve, for it appears to be fairly stable when dissolved in oil, and it can be kept in cod-liver oil for months and probably for years; it also survives for many months in tinned meat. Vitamin B can be preserved in the dry state, and wholemeal flour and unpolished rice retain their content of this vitamin for long periods. The preservation of vitamin C, the antiscorbutic vitamin, is by far the most difficult problem. This is well known; efforts have been made for the last hundred and fifty years to find some satisfactory way of obtaining a concentrated, portable, and stable preparation of the antiscorbutic element in fresh fruits or vegetables. The problem is of the greatest importance to the navy, and to explorers; in special circumstances it may be of first-rate importance to the army also. A stable preparation of vitamin C is essential for the prevention of scurvy when fresh vegetables and fruits are not obtainable. Lemon-juice was introduced as an antiscorbutic in the eighteenth century, and its use reduced the mortality in the navy enormously; lemon-juice is very rich in vitamin C, and the acids present help to preserve the vitamin. Unfortunately, in the nineteenth century lemon-juice was discarded for lime-juice, which has only one-quarter the vitamin content of the former. Lemon-juice, however, is not a really satisfactory vehicle for the preservation of vitamin C; Bassett-Smith found that commercial lemon-juice lost all its vitamin content rapidly; he showed, on the other hand, that dried lemon-juice tablets retained their vitamin for at least a year. Harden and Robison found that dried lemon-juice kept in a desiccator for fifteen months at room temperature only lost 50 per cent. of its activity. Hess ascertained that tinned tomatoes retained their vitamin C content with little loss for three years. He also found that if perfectly fresh milk was dried by a suitable process, and stored in sealed tins, its vitamin C content was preserved for many months. The simplest way of transporting vitamin C is by the use of dried peas; they contain little of the vitamin when dry, but produce large quantities when allowed to germinate; by the use of germinating peas an abundant supply of vitamins can be obtained by explorers or troops in sterile countries. It is important to realize that although dozens of different methods of food preservation are known, yet the few examples mentioned above are practically the only methods by which vitamin C can be preserved for any length of time.

Individuals living under normal conditions may suffer from vitamin lack, owing to an improper diet from which all vitamin-containing foods have been eliminated. All that is needed in such cases is the addition of such foods to the diet. The following foods are particularly rich in vitamins: Cod-liver oil contains about 240 times as much vitamin A as butter, yeast is the richest source of vitamin B, and fruit juices contain a large amount of vitamin C. Germinating seeds contain large amounts of both vitamin B and C, while green vegetables and tomatoes contain large quantities of all three vitamins. An abundant supply of all the vitamins can therefore be obtained simply by the addition to the diet of cod-liver oil and the fresh vegetables mentioned.

Certain workers claim to have produced concentrated preparations of vitamin B, but no methods are known by which either vitamin A or vitamin C can be obtained in concentrated form. Any attempt at chemical treatment produces a rapid destruction of the vitamins. As already pointed out, it is a matter of great difficulty to devise any means by which vitamin C can even be preserved, and its concentration is at present impossible. It is extremely easy to obtain an abundant supply of vitamin C by the use of fresh foods, but it is very difficult to retain more than a fraction of this vitamin in any form of preserved food. No substance is known

[1] The Sources of Vitamins, BRITISH MEDICAL JOURNAL, January 21st, 1922, p. 113.

which contains more vitamin A than cod-liver oil, and, as has been said, it is only in the case of vitamin B that any success has attended the repeated efforts that have been made to purify or to concentrate vitamins.

In spite of the fact that ordinary fresh foods are the simplest, cheapest, and richest sources of vitamins, the public apparently demands to be supplied with vitamins in the form of medicinal products. A large number of preparations are on the market which claim to contain vitamins. Some of these preparations are so far satisfactory that the prepared article has been proved to contain vitamins, although even in these cases a few ounces of green vegetables would probably contain more vitamins than large quantities of the preparation. In the case of certain manufactured products, however, it is simply stated that the preparation is made from substances very rich in vitamins. This statement means nothing, for, from the facts mentioned in this article, it is obvious that even if a preparation is made from a raw material rich in vitamins, it does not follow that the finished article will contain any vitamin at all when it reaches the patient.

We have endeavoured to state the known facts as plainly and directly as possible, and invite manufacturers to take note of them. They may be unwelcome, but they are, we believe, incontrovertible.

LUNACY REFORM.

THE Departmental Committee appointed by the Minister of Health to inquire into and report upon charges made against asylum administration by Dr. Montagu Lomax in his book, *The Experiences of an Asylum Doctor*, has been the subject of a good deal of criticism, and the position of the Committee has now been made very difficult by the refusal of Dr. Lomax, after at first consenting, to give evidence before it. He has taken this course, he states, because he considers that the Minister of Health had prejudiced the case by his speech at the recent Conference on Lunacy Administration, because the Mental Hospitals Association had extolled the system at present existing in its pamphlet (referred to in this JOURNAL of January 21st), and had thereby forestalled the Committee's verdict; and because the National Asylum Workers' Union had instructed its members not to give evidence owing to the one-sided and unrepresentative character of the Committee. Dr. Lomax stated further that he was acting on the advice of the National Council for Lunacy Reform, and criticized the constitution of the Departmental Committee on the ground that its members were all associated with the administration of mental hospitals. As an alternative he urged the appointment of a Royal Commission. In a reply to this letter Sir Alfred Mond pointed out that, pending such an extended inquiry as might be necessary at a later date, the appointment of a Departmental Committee was the most expeditious method of discovering the amount of truth there might be in Dr. Lomax's allegations. He regretted the action of the Asylum Workers' Union since the conduct of the members of the union had been criticized by Dr. Lomax in the gravest terms, and he pointed out that Dr. Lomax did not assist in the formation of a true verdict by publishing a large number of allegations and then declining to substantiate them.

As to the aims of the National Council for Lunacy Reform, its secretary, Mrs. Barbara Gould, states that its immediate object is "to secure for the mentally afflicted, both those who are certifiable under the present law and those who are not, treatment which shall be purely medical and curative—hospital treatment as opposed to asylum treatment. In pursuance of this purpose we shall resist the Board of Control's policy of putting those in the early stages of mental instability into the atmosphere and conditions of the lunatic asylum." To this Sir F. J. Willis, Chairman of the Board of Control, has replied that the object of the Board is the same as that of the Council, and that to assert the contrary was untrue. He stated, furthermore, that, while recognizing that many of our institutions fall short of the ideal, nothing is more likely to check the spirit of progress than to cast obloquy on the work of those many men and women who are earnestly striving to do their utmost for the care and treatment of the mentally afflicted.

This brief survey will serve to indicate the present state of things. It must be recognized that the position of the Departmental Committee has now become one of considerable difficulty, and it is doubtful whether any conclusions at which it might arrive will have much weight with the public. In view of the fact that Dr. Lomax has refused to give evidence, and that the members of the Asylum Workers' Union have been instructed to adopt a similar attitude, it is difficult to see how the evidence on which the report should be based can be obtained. The situation is undoubtedly unfortunate, and there would appear to be some danger of the whole question assuming a political rather than a social aspect. The *Daily Herald* of February 4th publishes an account of an interview with Mrs. Barbara Gould, in which she states that the whole question is a matter for the Labour party to take up. It is, of course, a question for the Labour party, and every other party, to take up, and, as was pointed out in our leading article of last week, it is most desirable that the public as a whole should themselves take an intelligent interest in the problem of mental disorder.

Unfortunately, an impartial and careful survey of the correspondence to which reference has been made gives rise to the gener l impression that the National Council for Lunacy Reform is tending to assume an attitude of uncompromising opposition to any suggestion for reform emanating from the Ministry of Health, the Board of Control, the Mental Hospitals Association, or, indeed, anyone actually connected with the administration of asylums and the treatment of the insane. It is difficult to understand how such a policy can be effective in bringing about those reforms which may be desirable. The whole subject is extremely intricate; it is bound up with legal considerations and technical problems which can only be solved by those with an adequate appreciation of their difficulties. There appears to be an almost wilful tendency to misunderstand the aims, aspirations and suggestions of those actually concerned in the treatment of the insane, and a complete forgetfulness of the fact that the reforms which are now advocated have been the subject of discussion in the asylum world for several years. The contention of Sir F. J. Willis that the policy of the Board of Control is the same as that of the National Council for Lunacy Reform would seem to be perfectly just, and the letter published in our last issue, from Dr. Edwin Goodall, indicates an extremely enlightened policy, which has been adopted as part of the programme of the Mental Hospitals Association.

It is extremely important that the general public should support proposals for improvement in the conditions under which the insane are treated, but we feel that reforms will be achieved much more readily if those who are responsible for carrying them out receive the co-operation and support of the public than by an attitude of hostility and misunderstanding. As it is, there would seem to be a tendency by exaggerated statements to create a wrong impression of the atmosphere, treatment, and general conditions which exist in the asylums of this country.

EPIDEMIOLOGICAL STATISTICS OF EASTERN EUROPE.

THE assembly of the League of Nations decided last September that one of the functions of the Health Committee should be the organization of an epidemiological intelligence service. The Health Committee entrusted the work to the Health Section, which issued on January 14th its first report.[1] This report contains twenty-two pages of tabular matter, displaying the reported monthly incidence of typhus fever, relapsing fever, and dysentery in Eastern Europe for 1920 and 1921, and of cholera, enteric fever, and scurvy in Russia. Then follow several spot maps, statistical charts, and two notes, one on the incidence of disease upon the Red Army and the other on the Russian census. To judge from the diagrams relating to Poland of the Congress, the maxima of the successive epidemics of typhus in 1919–21 have declined. That of 1919 occurred in May, with over 31,000 cases; the maximum of 1920 was in January, with between 29,000 and 30,000. The diagram for 1921 shows a maximum in March, with about 10,000 cases. In Russia, on the other hand, the 1920 maximum greatly exceeded that of 1919. Cholera is widely disseminated through European Russia; mentioning only those governments which by October 29th, 1921, had notified at least 5,000 cases, we note the Ukraine, Voronej, Saratov, Samara, the Republics of the Bachkirs and Kirghiz, and Siberia. The Russian census commenced on August 28th, 1920, and the note on it is interesting. Comparative figures are only obtainable for the great cities and show large diminutions. Petrograd had fallen from 2,319,000 inhabitants in 1913 to 706,000, Moscow from 1,817,000 to 1,028,000, Saratov from 235,000 to 183,000. In the introductory note it is said that the "form in which this report is produced is by no means final. The most convenient method of producing charts and maps will be determined by the nature of the data that may be at the disposal of the Health Section in the future." For our part, we have some doubt whether the value of the data justifies the amount of typographical labour which has been expended upon them. Even in settled countries, statistics of incidence of infectious diseases are open to criticism and must be handled with great caution. Nobody, of course, would expect that statistics of notifications from Eastern Europe could do more than indicate the trend of events. The remarks on p. 39 of the report, where it is pointed out that no less than 43 per cent. of all scurvy cases and 46 per cent. of the relapsing fever cases were those returned by the military authorities, make us doubt whether even this limited value attaches to the Russian data. Yet an entire page of ten columns and forty-five rows is devoted to the notifications of scurvy in Russia. It also seems unnecessary to print the letterpress in both French and English. Few who consult these reports will be unable to read simple French. These comments are not intended to be depreciatory of the new venture, but one has to recollect that "official" statistics enjoy a certain prestige, and that they are often quoted by those who do not trouble to read the letterpress. Statistics cannot be made fool-proof, but when unreliable data are displayed in great detail there is some risk of avoidable error.

CANCER RESEARCH.

THE generous offers intended to stimulate cancer research made by Lord Atholstan and Sir William Veno have been directed into better channels since they were discussed in our columns on February 4th (p. 200). In response to the opinions publicly expressed by those in touch with scientific affairs, Sir William Veno immediately amended his offer, and has agreed to devote £10,000 to the direct and immediate assistance of cancer research during the next ten years in annual payments of £1,000. Lord Atholstan, in his turn, has stated that his first offer of a prize of 100,000 dollars (£20,000) for an "approved medicinal cure" for cancer still stands, but that he will give a second 100,000 dollars to help in the work of research. The authorities of any particular institution are always apt to consider their own as that which is doing the most important work, but we think the head of one of the metropolitan hospitals has been a little precipitate in assuming that the funds thus unexpectedly accruing to the support of research work in cancer are meant exclusively for one institution. There is more than one laboratory for cancer research in this country. The Imperial Cancer Research Fund has an honourable history of some twenty years, and its record of achievement is not less than that of other similar bodies engaged in the same work. The London Cancer Hospital in the Fulham Road has a research institute, where much excellent work has been done, as has also the Royal Cancer Hospital, Glasgow. There are special cancer hospitals too at Liverpool, Manchester, Bradford, Dublin and Cork, all of them seeking a cure for the disease. There are also the radium institutes; that which has been established for a dozen years in London has done a great deal of valuable clinical work which has thrown light on the pathology and treatment of cancer, and it possesses also a research department; the Radium Institute at Manchester, established largely through the efforts of Sir William Milligan, has well-equipped research laboratories and a highly competent staff. All this is said not by way of disparagement of the cancer research laboratories of the Middlesex Hospital, which are probably the oldest in this country, and from which much first-rate work has emanated. We can quite understand that the authorities of the Middlesex Hospital should greatly desire additional funds to enable them to extend the scope of the researches there conducted, but what is wanted seems to be some impartial tribunal which will decide how the gifts now made can most advantageously be administered. It may well be that the Medical Research Council might most properly be entrusted with this duty; it is a committee of the Privy Council and receives a substantial grant from Parliament. This grant has recently been cut down; we gather, however, that the Council is continuing the assistance it gives to cancer research, and it would no doubt be in a position to advise as to the distribution of new money. It will be remembered that the Council is empowered under its charter to hold money derived from private benefactions.

THE LEAGUE OF NATIONS AND THE OPIUM TRAFFIC.

THE records of police and coroners' courts continue to bear witness to the extent of the abuse of drugs of addiction such as morphine, heroin, and cocaine, and remind us of the need for effective enforcement of the Dangerous Drugs Act, 1920. Some progress, though slow, has been made by the League of Nations towards putting into operation the International Opium Convention of 1912 since we last called attention to the matter.[1] Arising out of recommendations of the Advisory Committee and resolutions of the second assembly of the League last September the Council has directed certain important steps to be taken. Thus the Provisional Health Committee of the League has been moved to conduct an inquiry as to the actual amount of morphine, heroin, cocaine, and allied drugs which are deemed to be required for medical and legitimate purposes in different countries. Then, again, communications have been addressed to China, and to governments having treaty relations with China, with a view to stopping the illicit importation of dangerous drugs into that distracted country. Replies are, we understand, slowly coming in to the questionnaire addressed by the secretariat of the League to the various Powers parties to the Convention, as to the steps they have taken to put its Articles into operation, and also as to the illicit manufacture of dangerous drugs within their territories. It appears that there are several Powers which are now members of the League but which have not as yet signed the Convention, and several others which have signed it but not yet ratified it. The secretariat of the League has transmitted to all member States the recommendation urging that they should prohibit the export of any of the dangerous drugs in question to any country

[1] *Epidemiological Intelligence: Eastern Europe in 1921.* No. 1. League of Nations, Health Section. Geneva, January 14th, 1922; pp. 53.

[1] BRITISH MEDICAL JOURNAL, August 27th, 1921, p. 329.

unless its Government shall have intimated its approval thereof and certified that such drugs are to be used for medical or legitimate purposes only. Questions dealing with the limitation of the world-production of raw opium to meet legitimate needs only, and as to the desirabilityof summoning a further international conference to consider the suppression of the abuse of all dangerous drugs, have been referred to the Advisory Committee, which is to hold its second meeting this spring; we are informed that April 25th has been provisionally fixed for its assembly. It is evident that much remains to be done in order to put into effective operation the provisions of the Convention of 1912 in regard to raw opium, opium prepared for smoking, morphine, heroin, and cocaine, and their salts and preparations, without at present embarking on a wider field. We have yet to learn that licences are required in this country for the manufacture of these drugs, or that any limitation is placed upon their production, as would appear to have been contemplated by the Dangerous Drugs Act of 1920. From a recent reply in the House of Commons it would seem that some 156,435 acres are under the poppy in British India, showing a more extensive cultivation than before the war. Nearly 1,000 chests of opium were exported from British India in 1919–20 to the Straits Settlements, Dutch East Indies, Siam, French Indo-China, Japan, Hong Kong and adjacent parts, and the Secretary of State is unable to say how much of this raw opium exported from India is converted into prepared opium for smoking. It would be interesting to know whether it is officially maintained that all the opium raised in India under Government control is required and utilized for medical and legitimate purposes only.

PHYSIOLOGY AND THE WAR.

IT must be recognized that physiology is an independent science, and not merely a branch of medical science, and that all exact knowledge of the activities of life—human or animal—is founded upon it; without this exact knowledge medicine and surgery and preventive medicine would have remained in their mediaeval stage of development. In the January number of *The Fight Against Disease*, the quarterly journal of the Research Defence Society, appears an article on "Physiology during the War," based upon the presidential address by Sir Walter Fletcher in the Section of Physiology at the Edinburgh meeting of the British Association last year. Modern physiology in this country may be said to have begun in 1836, with Sharpey's appointment to University College, London. To the influence of this great teacher may be traced directly the development of all the chief British schools of physiology. During the past half-century British physiologists laid the whole world under a heavy debt, and this period included the revolutionary work of Pasteur and Lister, which made a stronger appeal to the national conscience. During the war bacteriological work had its prominent place in the detection and prevention of disease, but in a sense the more complete the prevention of infective disease the more apparent became the stresses of war. The violences offered in modern warfare to the human body—whether by physical damage through exertion and exposure, by terror or excitement, or by the stresses of flying and fighting in the air—brought many new and urgent calls for precise physiological knowledge. The results of pain and fear, of haemorrhage, of shock by wound or operation, all required further analyses before effective treatment could be devised. Our forces being engaged in every climate, from the Equator to the Arctic regions, were faced with numerous local or accidental variations of diet, and it was necessary to apply physiological studies of heat-loss and of heat-production to the practical problems of clothing and diet. At home men and women alike were exposed to arduous toil and to poisons of many kinds needed for munitions, and in all these dangers the guidance of the physiologist was needed to avoid industrial fatigue and loss of output, and to devise methods of protection against industrial poisons. The menace of starvation threatened the whole nation, and our escape from that was due to a system of rationing, based upon accurate physiological knowledge gained by experimental methods. Sir Walter Fletcher said that it would be a truism and a commonplace to affirm that no bravery and no fortitude could have avoided defeat without the help of scientific men and of the fruits of experimental science, though that commonplace had never been enshrined in the addresses or thanks of Parliament, or in the prayers and thanksgivings of the churches. The Research Defence Society exists to promote national health and efficiency, to bring about a better understanding of the value of medical and surgical studies, and to expose the false and frequently absurd statements often made against them. That this work is necessary may be seen from the crude prejudices and sentimental appeals of such antivivisection publications as the *Abolitionist*, a British antivivisection magazine, the scientific value of which may be gauged from such an editorial comment as the following: "The only disease to which cow-pox bears analogy is that of syphilis. It is urged that cow-pox is not now taken from child to child, but is passed through a calf, and that the introduction of *human* diseases is therefore impossible; but the origin of the matter inoculated into the calf is unknown and its history is a very shady one" (*Abolitionist*, January 2nd, 1922, p. 7). The Research Defence Society, which defends medical studies and exposes the false statements that are made against them to the public, deserves to be supported by the medical profession. The annual subscription is 10s., and applications for the society's publications should be sent to the secretary, 11, Chandos Street, London, W.1.

A PHYSICIAN ON THE SURGICAL TREATMENT OF EMPYEMA.

IN a refreshingly frank paper, largely based on the application of knowledge gained during the war, about wounds of the chest, to the routine treatment of thoracic empyema, Dr. J. A. Nixon, of Bristol,[1] has pointed out that it is the physician's duty to improve the commonly practised treatment of empyema, which consists in opening and drainage by a tube. The procedure, comparable to opening an appendix abscess and insertion of a drainage tube, should, whenever possible, be avoided, for secondary infection readily supervenes, thus increasing the danger to life, causing increased interference with re-expansion of the lung, and retarding convalescence more than do most single infections. It has long been known that pneumococcic empyemas sometimes clear up entirely after aspiration alone, and this satisfactory result would probably be much more frequent if aspiration was performed earlier and for smaller collections of fluid than is the usual practice. The experience gained in the later part of the war from the influenzal cases, both in Europe and America, was that early resection for streptococcic empyema was disastrous, and that repeated aspirations either led to cure or tided the patients over until an operation could be safely undertaken. The operation, it is urged, should consist of a wide incision so as to allow good access to, and inspection of, the pleural cavity and its exploration with the hand for the removal of lymph. In order to favour expansion of the lung, the chest should be completely closed at the operation and resection of ribs should be avoided; if necessary, repeated aspiration can be performed subsequently. Dr. Nixon looks forward to the time when open drainage of the chest will be regarded in the light of "a surgical abomination," and points out how rapidly a collapsed lung will expand; in one case the lung was found to have expanded completely two hours after complete thoracotomy with hermetic closure of the wound. When the pleural cavity is properly cleaned the lung readily expands and is not prevented from doing so by the presence of air; for this reason breathing exercises, such as blowing into bottles, are unnecessary; in the presence of adhesions they are useless. Decortication of the lung should, if it is to be performed, be carried out at the time of the primary operation and not be regarded as essentially a late

[1] J. A. Nixon: *Bristol Med.-Chir. Journ.*, 1921, xxxviii, part 143, p. 82.

procedure. The lung can be handled without producing shock if care be taken to prevent displacement of the mediastinum and its contents; but if the heart is allowed to swing out of position very grave shock may result. In this connexion it is interesting to note how very little distress is caused by sudden pneumothorax when the heart is retained in position by old adhesions. The procedure designated by Tuffier as "Estlander's ill-advised operation" is defined by Dr. Nixon as "a belated confession of a series of therapeutic failures"; it appears to be based on the assumption that since the lung has collapsed the best that can be done is to accept the situation and make the chest wall also collapse. Collapse of the lung should be prevented by thorough exploration of the pleural cavity at the time of operation or as early as possible when it appears probable that the lung is not expanding. If this becomes the practice, Estlander's thoracoplasty, which merely sets a seal on an embarrassing deformity, will fall into the complete oblivion it deserves.

MEDICINE IN THE "ENCYCLOPAEDIA OF RELIGION AND ETHICS."[1]

As each volume of this great work has appeared it has been the practice to note here some[2] of the articles which have had medical matters as their subject, or which have been more or less directly related to medicine. The work is now crowned by the issue of the twelfth and last volume, and the highest compliment which can be paid to the editor (James Hastings, M.A., D.D.Aberd.) and his assistants and his publishers (T. and T. Clark, Edinburgh) is that the high level reached by the earlier instalments has been maintained fully. On an average each volume has contained over 900 two-columned pages, and the type, never large and often rather small, has conspired with the editor to crowd many more words into each page than a mere glance at the work would suggest. Thus there are here over 10,800 pages, or 21,600 columns, with at least 600 words in each column, or a grand total of more than 12,960,000 words; and there is no padding. It is a stupendous work; it is nothing less than a national achievement comparable to the *Dictionary of National Biography* or the *New English Dictionary*; it has been accomplished within fourteen years. To the medical man the concluding volume, like all its predecessors, offers many articles of interest. Even the first of them on Suffering, although not strictly medical, cannot but draw his attention, for it deals particularly with the problem of "meaningless pain," the riddle which is mutely or articulately asked of many doctors every day. There is something, too, of medicine in the articles on the Todas and the Veddas, both of them written by Fellows of the Royal College of Physicians of London (W. H. R. Rivers and Charles G. Seligman); but there is much more in several of the articles from the pens of non-medical authors. In the latter category comes the article on Sweat and Sweat House; a fact which may account for the slip with which it begins—namely, "sweat is a secretion of the sebaceous glands," sudoriparous, of course, being intended. Dr. Edwin Sidney Hartland's articles on Totemism and on Twins are most attractive; indeed, in that on twins the President of the Folklore Society has brought together and made a readable article of a great mass of extraordinary facts bearing upon the notions and superstitions that are to be found in every part of the world on the subject of plural births. To dip into it at random, one finds this: "In Mexico the Tlaxcalans call twins snakes; and they are believed able to cure the bites of serpents and other animals, as well as pain or inflammation of the tendons, especially of the feet and ankles; triplets will be kings." But in too many places twins are held to be unlucky and are destroyed. In India the birth of twins of different sex is a serious matter; their close association in the uterus has been sinful. "In the north-east of Scotland twins are so far regarded as unlucky that one of them, even though married, will be childless." Other articles touching on medicine are those on vegetarianism and on vivisection. The summing-up of the latter (which is by Geikie-Cobb, D.D.) is, "the method of regulation, not suppression, adopted in this country does justice at once to the unquestioned claims of the lower animals to kindly treatment and to the duty of man to his fellows—the duty of using his reason in the age-long task of diminishing and finally extinguishing that particular form of evil which goes by the name of disease." There is something, too, of medicine in the articles on suggestion, suicide, sun, moon, and stars, Swedenborg, tabu, the Tati bushmen, tatuing, teeth, temperament, temperance, the Tlingit, the Tongans, Tonking, transmigration, the Tungus, unction, vampire, Vancouver Island Indians, water, will, the Yakut, yawning, and the Yogis (and their hypnotic devices). Wherever the volume is opened something of interest is found. An index volume is in preparation, and will add greatly to the value of the whole work.

[1] *Encyclopaedia of Religion and Ethics.* Edited by James Hastings, with the assistance of John A. Selbie, M.A., D.D., and Louis H. Gray, M.A., Ph.D. Vol. xii. Suffering-Zwingli. Edinburgh: T. and T. Clark; New York: Charles Scribner's Sons. 1921. (Pp. xxiv + 876. 35s. net.)

[2] See JOURNAL, February 7th, 1914 (p. 335), January 9th, 1915 (p. 81), June 17th, 1916 (p. 862), and December 11th, 1920 (p. 910).

THE COLLEGE OF SURGEONS IN 1822.

FEBRUARY 13TH, 1822, is one of the landmarks in the history of the Royal College of Surgeons of England, for that was the date on which George IV granted it a supplemental Charter, changing the titles of the principal Master and Governors to President and Vice-Presidents, and providing that the Court of Assistants should in future be styled the Council of the College. The last Master and first President was Sir Everard Home, the pupil and assistant of John Hunter, whose sister he married. The "indelible blot" on Home's fame is his destruction of Hunter's manuscripts. The Charter of 100 years ago further empowered the College "at all times hereafter, and upon all such occasions as they shall think proper and expedient, to exercise and enjoy the Right and Privilege of having a Mace, and of causing the same to be borne by such Officer as they shall appoint for that purpose." Those who are familiar with the historical summary printed each year in the College *Calendar*, will remember that in 1800 George III had granted a Charter re-estabilshing the dissolved Company of Surgeons by the name of the Royal College of Surgeons in London, with perpetual succession and a Common Seal, and severing its connexion with the Corporation of the City of London. The centenary of the Royal Charter of Incorporation was celebrated formally in July, 1900, when the President, Sir William MacCormac, gave an address on the progress of surgery from early times, and the rapid advance made in the century that had just closed. On this occasion a large number of honorary fellowships were conferred. Among the lesser provisions of the Charter of 1822 was one permitting the College to provide a proper room, house, or building with suitable conveniences, for the dissection of the bodies of murderers, within half a mile of the usual place of execution, instead of within 400 yards, as formerly. The object of this was perhaps to meet the difficulty caused by the removal from Surgeons' Hall in the Old Bailey (hard by Newgate Prison) to the present site in Lincoln's Inn Fields, at the close of the eighteenth century. The dissection of murderers was abolished by the Anatomy Act of 1832. In 1843 the name of the College was changed by a further Charter to the Royal College of Surgeons of England, and a new class of members, to be called "Fellows," was instituted. The first 300 Fellows were elected in a general body under one diploma on December 11th, and a further election of 242 took place eight months later.

TREATMENT OF LEPROSY IN THE PHILIPPINES.

IN a note on leprosy in the island possessions of the United States (November 12th, 1921, p. 808) mention was made of the information on this subject given in the Director's report of the Philippine Health Service in 1919. We have now received the report for 1920. From this we learn that in May of that year a Committee on Leprosy Investigation

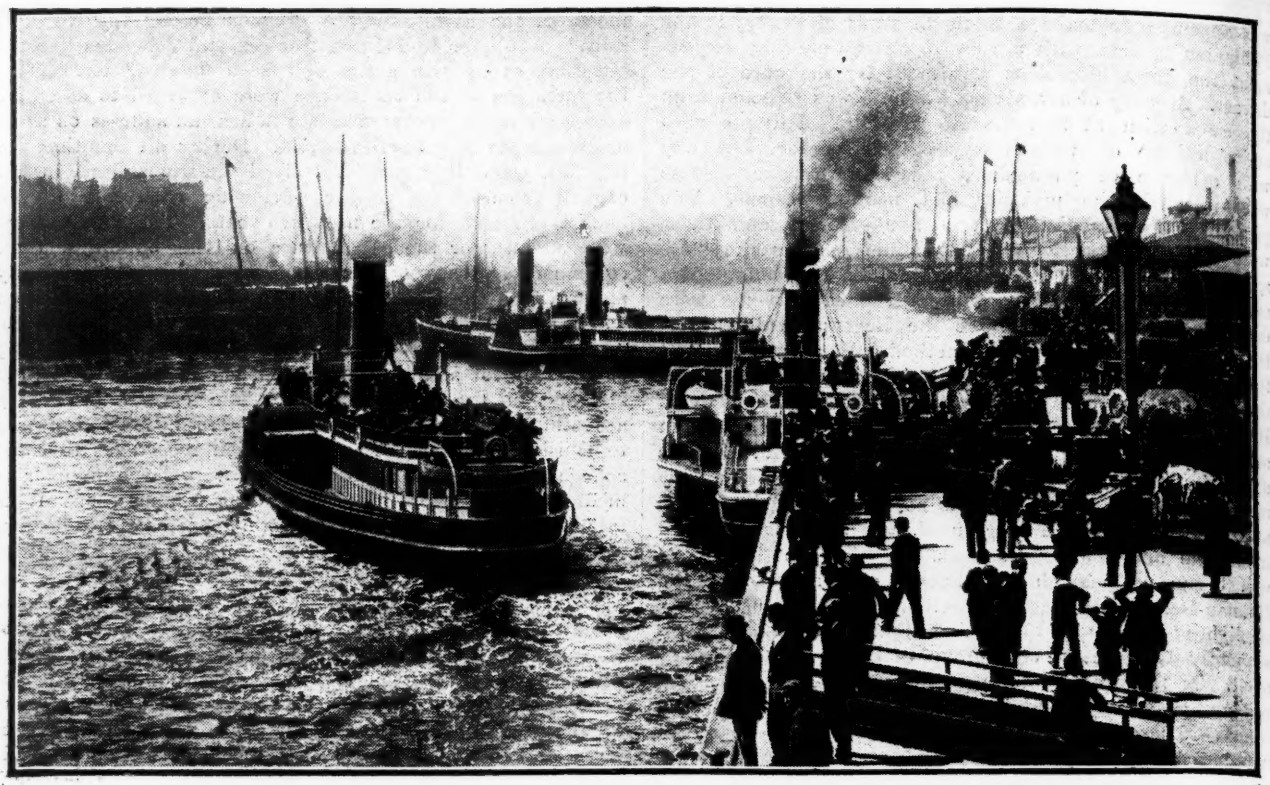
was appointed to make a thorough study of leprosy in the Philippine Islands, with a view to ascertaining by experiment the most efficacious treatment for the cure of the disease. A group of seventy-six patients was selected from the cases then at San Lazaro Hospital. Patients with active lesions of various types were chosen, but any with evidence of pulmonary, renal, or cardiac disease were rejected; the majority had nodular lesions. The patients were subdivided into five groups, and these were treated respectively with sodium gynocardate "A," sodium gynocardate "S," sodium morrhuate, chaulmoogra emulsion, and Mercado's mixture. The experiments were designed primarily to compare the Rogers treatment (or treatments) with the Mercado method. As a rule, the first three preparations were given intravenously twice a week; the last two were injected intramuscularly once a week. In some cases the subdermal route was employed, and in others two modes of administration were combined. Details of the treatment are given in the Committee's preliminary report. The Mercado mixture is noted as being by far the most painful of all the drugs used, and as giving marked immediate and remote reactions. At the time the work was begun not enough was known of the value of the Holman-Dean chaulmoogra esters to justify their use, but in the light of further information the Committee decided subsequently to select a new group of cases for this treatment. Of the treatments employed up to the time of reporting, sodium gynocardate "A" had given the best results, 86 per cent. of the cases showing some degree of improvement; the figures for sodium morrhuate were 75 per cent. improvement, for Mercado's formula 64 per cent., gynocardate "S" 60 per cent., and chaulmoogra emulsion 38 per cent. The sodium morrhuate and the Mercado mixture seemed to have the most bacteriolytic effect. These results inspired the hope that the new methods of treatment, if used systematically over longer periods, would produce permanent cures in a higher proportion of cases treated than was possible by any previous methods. The Committee accordingly advised that one or more of the chaulmoogra methods be made available for all the segregated lepers in the islands, and that the present investigation be continued on a larger scale, with a view to improving further the methods of treatment. It recommended an appropriation of 600,000 pesos for this purpose, but in view of the depleted state of the insular treasury this was cut down by the Legislature to one-sixth. An account of recent knowledge of the chaulmoogra oil derivatives was given in an article on the treatment of leprosy printed in the BRITISH MEDICAL JOURNAL of November 19th, 1921, p. 851.

PEKING UNION MEDICAL COLLEGE.

ON November 5th last we published an illustrated description of the new Medical College provided in Peking by the China Medical Board of the Rockefeller Foundation, and gave a brief account of the opening ceremonies, which were attended by representatives of many countries, including Japan, Great Britain, Canada, and France, as well as the United States. We have had the opportunity of reading a report made by the secretary of the foundation, Mr. R. Embree, from which we gather that the medical conference was a more serious meeting than we had supposed. On the morning of each of the seven days which the conference lasted two hours were spent in witnessing demonstrations in medicine, surgery, obstetrics, pathology, and various specialties given in six or seven clinics by visiting professors and members of the college faculty alternately. For the next hour one of the visiting scientists gave an address. The members took their revenge in the afternoons, which they spent in sightseeing and junketings. Chinese societies gave luncheons, the foreign legations gave dinners and teas, and "the Peking Chamber of Commerce bundled us all off in a flock of automobiles late one afternoon to the summer palace of the late Empress Dowager for a picnic supper and a magic view, by the yellow September moon, of the royal pleasure grounds among the Western hills." A dinner to faculty, trustees, and delegates "closed Saturday evening in a riot of speech making," but usually the members of the conference were expected to assemble each evening in the auditorium to hear an address on some medical topic of general interest. During all this time the trustees, eschewing pleasure, lived laborious days in the council room of the college, reviewing each item of the budget proposed for the next two years. These discussions were serious, for the expenditure on the buildings, their equipment and supply, has been larger than was originally planned and the costs for the annual maintenance threaten "to become intolerably great." The budgets finally agreed to for the college and hospital for the next three years are slightly below those of similar well-established institutions of high standing in the United States. The classes in Peking are still small and not more than 175 hospital beds are to be used at present. The Foundation recognizes that the college can never hope to train the very large number of medical practitioners needed by the Chinese, but it is intended to set a standard, to train leaders, and to demonstrate what an adequate medical college in China might be. The faculty as it exists to-day falls into three groups—first a nucleus of medical men who have served in mission hospitals and schools who were selected from the six or seven hundred medical missionaries in China and further trained with the help of fellowships in England or America before being given positions on the staff; secondly, a group of men who have been brought directly from teaching or research institutions in the West to continue their scientific careers in the new college; and thirdly, Chinese practitioners, who already form a fair proportion of the whole faculty. It is hoped that their number will steadily increase and that their academic and administrative responsibilities will be rapidly extended.

PROSPECTS OF THE PARLIAMENTARY SESSION.

NEITHER the King's Speech at the State opening of Parliament for the new session on February 7th nor the initial debate gave any indication if and when a dissolution is contemplated. But there was no expectation that any hint would be afforded in any case. Finance, Irish legislation, and House of Lords reform were the principal subjects touched upon, but it was noticed that there was no committal to the introduction of a bill to deal with the reconstitution of the Second Chamber. The word used in the Speech from the Throne was that "proposals" for House of Lords reform would be submitted, thus leaving the course of the Government in this regard undefined. It might conceivably be that only the policy of the Cabinet would be announced. The term might be equally consistent with a resolve to press forward the solution of the problem within the session. A significant declaration in reference to economy was that the retrenchment deemed necessary "must involve hardship to individuals and the postponement of public hopes." A good deal of interest will be aroused in two minor bills which are included in the small programme. The first of these, which is to be introduced immediately by the Minister of Health, Sir Alfred Mond, is to increase the contribution rate and benefit under the National Insurance Act. According to rumour, employers and employed are each to be required to give an extra halfpenny a week in respect of each insured person. The second announcement was that the Government will bring in a Criminal Law Amendment Bill; expectation is that this will be more or less based on the Bishop of London's Bill of last year, which had been modified to meet the recommendations of a Joint Committee. This was shipwrecked in the Commons late in the session. It had the sympathetic support of the Home Secretary on behalf of the Government, but a measure brought forward by a Minister will, of course, be in a much more hopeful position from its very start for getting passed into law.



Photograph by] THE BROMIELAW, GLASGOW. *[Annan, Glasgow.*

NINETIETH ANNUAL MEETING
of the
British Medical Association,
GLASGOW, 1922.

GLASGOW TO-DAY.*

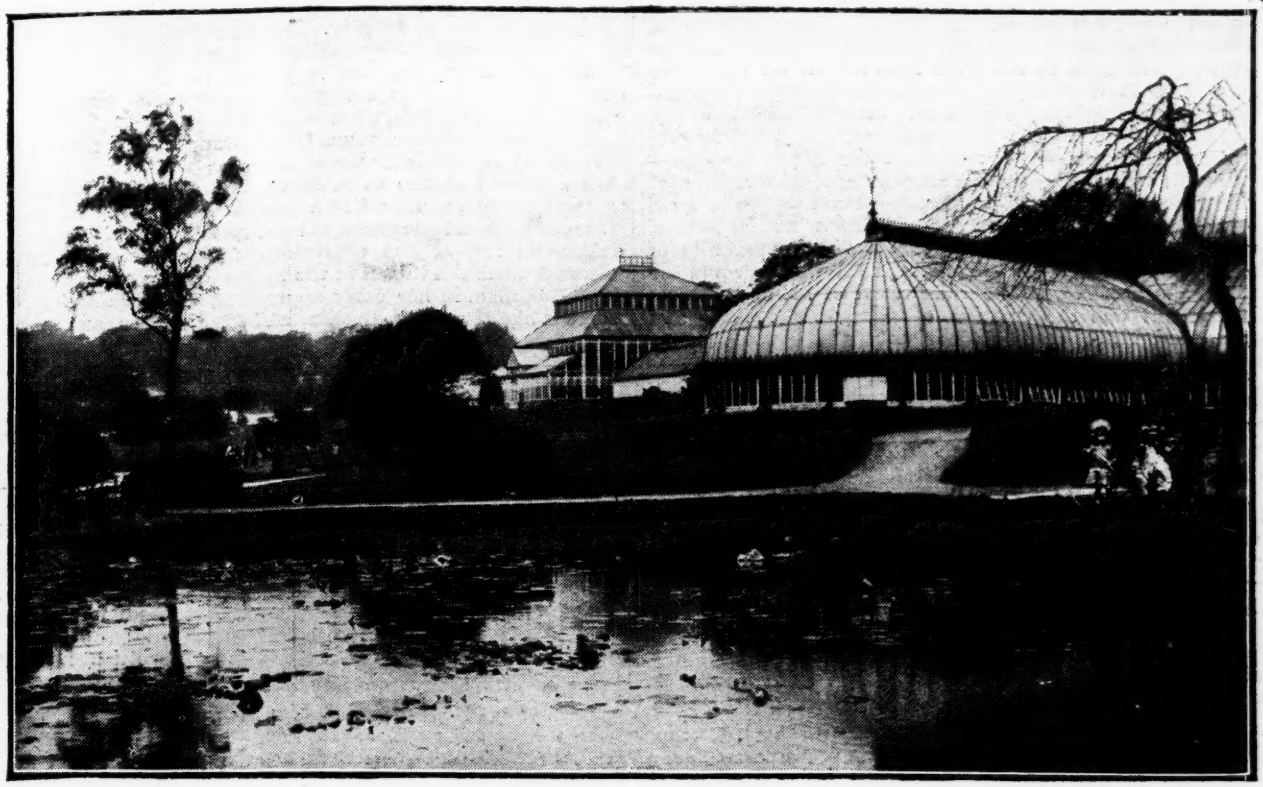
TOLBOOTH STEEPLE.
(Photo by Annan, Glasgow.)

FROM the curiously diverse impressions of Glasgow in the minds of Englishmen one thing at least can be deduced with fair certainty. The favourable impressions were those of people who had stayed with friends and been taken about; the unfavourable, of people who had been stranded in hotels. Glasgow does not cater well for strangers. To arrive in Glasgow on a wet Saturday by way of Cowlairs or St. Rollox, and spend a lonely week-end in an hotel, is an experience which the native cannot contemplate without a shudder. It would have been more tolerable fifty years ago, when the city was about half its present size and there were charming rural nooks within half an hour's walk from George Square. To-day, with the country smudged or suburbanized for miles around, Glasgow is driven in upon itself for solace. Hence the prodigious outcropping of gorgeous teashops, picture-houses, and dancing palaces. These, however, are mere escapes, of decidedly limited appeal. Their existence may point the need for open spaces and gardens within the city; for an attractive lay-out of the banks of the Clyde above the harbour; for the dissipation of the smoke-cloud that robs the city's life of light and colour; for the conversion of the depressing and furtive "pub." into a cheerful café; for the removal of ugly posters; and for the building of an opera-house and a repertory theatre. Glasgow's main defect is that she has not yet thoroughly realized her metropolitanism.

The greatness of Glasgow and her glaring defects are explained by her history. Under the shadow of the Cathedral she rose in Celtic times from an obscure village to a market town, which straggled downhill and linked up with a fishing hamlet on the Clyde; with the founding of the University in 1450 she became a social and cultural centre, and the traditions of this period were continued into the mercantile era—commemorated by the Tron Steeples and St. Andrew's Church—when, under the aegis of the "tobacco lords" and the University professors, Glasgow became perhaps the most beautiful city in Britain. Then came the industrial era the deepening of the Clyde, the working of the coal and iron measures, and the flooding-in of semi-barbarous "labour" from starving Ireland; Glasgow burst her mould, and added to her traditional functions those of a greater Birmingham and a smaller Liverpool. The result was disharmony, a strange mixture of handsomeness and ugliness, of wealth and squalor. Glasgow is still struggling to sort out the mess that culminated about the middle of last century. The struggle is not so much material as psychological. It is the effort of the constructive, intellectual, and civically-minded elements to counter the sordid and illiberal influences that got the upper hand during the height of the manufacturing era.

In the Middle Ages the centre of Glasgow was at the south-west corner of what is now Cathedral Square. By the sixteenth century it had shifted to Glasgow Cross, where the Tolbooth Steeple now stands. A century ago it was some-

*Previous articles, on the City and University of Glasgow, have appeared in the BRITISH MEDICAL JOURNAL of December 3rd, 1921, p. 961, and January 7th, 1922, p. 29.



Photograph by] THE BOTANIC GARDENS, GLASGOW. *[Annan, Glasgow.*

where towards the eastern end of Ingram Street, and forty years ago the municipal government found a permanent seat in George Square. To-day the vital centre of the city is at the corner of St. Vincent Street and Renfield Street. The comparative nearness of all these points to one another indicates that the expansion of the city has been in all directions. But the greatest spread has been westward. From the St. Vincent Street corner open, or at least "smudged," country can be reached in less than an hour's walk north or south, and in slightly over an hour's walk due east; westward the tenements, docks, factories, and shipyards extend for about nine miles. A hundred years ago offices, dwelling-houses, and factories were jumbled together; the first real prevision of the future growth of the city was the laying out of the terraces at the west end of Sauchiehall Street about 1825, and since that time there has been a leap-frog process which has resulted in a city as definitely sorted out as London. The "heavy" industries have retreated to the outskirts of the city, mostly to east or west. Springburn, in the north, has become the centre of a huge locomotive-building enterprise. The miscellaneous or small-scale manufactures fill the interspaces of all save the most exclusive of the residential districts; their chief concentration is in Bridgeton and Mile-End, contiguous regions vieing in concentrated unpleasantness with anything in London's East End.

Within the city proper the most notable feature during the last fifty years has been the conversion of "genteel" tenements or terrace houses into working-class dwellings, workrooms, or offices. Monteith Row, owing to its fine frontage to Glasgow Green, has been spared this degradation. But the old villas on Garngad Hill have been submerged in squalor; Gorbals, once an eminently "select" quarter, has become Glasgow's Ghetto, paraded after nightfall by patriarchs in bowler hats and long surtouts, buxom Miriams and Rebeccas, and keen-eyed swains who have spent the day auctioning jewellery and drapery in Trongate booths. Garnethill, on the north of Sauchiehall Street, has a synagogue at one end and a fine new Roman Catholic church at the other, with every conceivable kind of "institution" between; it is also the hill of the fairies, who may be seen at midday tripping down to rehearsals. Sauchiehall Street is the western part of Glasgow's shopping region, which extends down the chief thoroughfares to Trongate, with its fashionable centre at Buchanan Street, where the motors of the "County" occasionally grace the scene. "Sauchie," as some of its pseudo-oriental features may indicate, is also Glasgow's pleasure street, and in this capacity has probably a big future before it, for Glasgow has made a vigorous awakening from the puritanical slumber of the senses.

The City Chambers, the Royal and Stock Exchanges, and the braw banks are all noted in the guide book. But the guide book omits to note that between Queen Street and Hutcheson Street lies the "werrus" (warehouse) region—possibly the "essential" Glasgow—which is so admirably described in Frederick Niven's novel, *Justice of the Peace*. To the rather "wersh" odour of piece goods succeed the very definite aromas of cheese, ham, and vegetables. East again of the provision quarter one enters the fragrant precincts of the slaughter-house and the cattle and meat markets—not a delectable district, but abounding in quaint human character and thumping big cheques. Here acquaintance may be made with a "benefit shop," a "fent merchant," and the thing actually connoted by the term "noxious trade."

To a Glasgow man the name of his city mentioned at random would probably conjure up Gordon Street at five on a week-day afternoon. Short, straight, and closed in by buildings at both ends, the street is like a huge tank or trench. At one minute to five the stream, though full, is normal. At five there is a deep murmur from all the streets around, and in an instant the vehicular traffic is blotted out by a silent, hurrying throng, overflowing the roadway; with a fixed unseeing stare each shuffles or trots along, obtaining his paper from the newsboy by a two-handed process like that of an engine-driver exchanging discs with a signalman. At Hope Street you find yourself struggling against the main inflow. It is pouring down from Blythswood Hill, in Madeline Smith's day a genteel residential quarter, now the legal, accounting, ship-owning, and general "business" quarter of Glasgow—its City, in fact—with St. Vincent Street as its main artery. The chief outflow of this flood is the Central Station; the "Cathcart Circle"—an interesting survival—collaborates with the "cars" in transporting the majority of Glasgow's white-collared or shirt-waisted brigade to the pleasaunces of Govanhill, Mount Florida, Shawlands, Strathbungo—in short, to that vast borderland of tenements and terraces and cottages known as the "South Side," which, at its western end, bourgeons into the gorgeous villadom of Pollokshields, with lakes, parks, feudal battlements, and an outlook over ancestral policies to the wooded slopes of Renfrewshire.

A smaller outflow finds its way to Dennistoun, a smoke-scourged suburb hemmed in by cemeteries, breweries, chemical works, and slums. Then there is a large but more leisurely percolation to the West End, the region encircling Kelvingrove Park (Glasgow's finest achievement in town-planning) and the Botanic Gardens. On the South Side one enjoys fresh air, modern improvements, and adjacency to open country, but one is cut off from the life of the city—south of Jamaica Bridge there is not even a passable restaurant—and the majority of the people are "incomers" who have never seen Glasgow Cathedral or read "Senex" or MacGeorge. In the West End one is in close touch with the main life of the city and, through the University and Art Gallery and the orchestral concerts, with the wider world of art and letters; Woodsidehill was the creation of Glasgow's consuls and barons, and Hillhead and Dowanhill have a mellowness that makes up for smokiness. In Great Western Terrace Kelvinside possesses the finest domestic work of Glasgow's greatest architect, Alexander Thomson ("Greek" Thomson), whose buildings—including St. Vincent Street United Free Church and Queen's Park East United Free Church—the visitor should not miss.

One has accounted only for the bourgeoisie, *grande et petite*. What of the working classes, who form the vast majority of the population, and on whose skill and physical endurance the prosperity of Glasgow is based? Drink, bad housewifery, and recklessly large families have depressed their conditions, and they are probably the worst housed people west of Moscow. The dingy frowsiness of the huge barracks in which they are crowded makes the magnificent stone of which Glasgow is built as depressing a medium as English brick. The canyons of Hutchesontown, Camlachie, and Govan are unresponsive even to the crepuscular glamour that poetizes the massive buildings of the city and the West End. That grace of body or mind should be rare in such conditions is little wonder, or that such intellect as manifests itself should run to an arid and resentful doctrinairism. Yet in the fundamental human virtues the Glasgow working classes are rich, and in character and humour second to none among the world's peoples. Their recent intellectual awakening, though it took a crude and even dangerous form, was an earnest of strength and purpose, and of a determination to make the world a little better than they had found it. In this determination, strengthened and guided by school teachers, and by the more humble-minded of the "intellectuals," lies the chief hope of our race. It is probably in those streets which the visitor cannot pass without a sinking of the spirits that the germ of the greater Glasgow of the future could be found.

Glasgow is pre-eminently a "business" city, a fact which is unduly insisted upon by those of its inhabitants who make it an excuse for neglecting its civic and social interests, or for not devoting their leisure to anything more strenuous than golf or musical comedy. But in the view of those who love their city, industry and business are only means to the great end of making the very most of the rich human material contained in a city where the racial elements of Scotland, mainly Celtic, are uniquely blended.

In a historical perspective the University, even more than the Town House, is the real centre of Glasgow. Glasgow has a great tradition to maintain in philosophy, theology, economics, and, above all, in applied science and in medicine. Her record in art goes back to the days of the Foulis Academy in the middle of the eighteenth century, and the Celtic element manifested itself in the taste and enterprise of buyers like McLellan, in her early appreciation of genuine impressionists like Monticelli, Boudin, and the Marises, and in the rise of her own Glasgow School, which affected the whole current of British art. In literature she has been less notable, owing to the failure of her publishers and her reading public to realize her new position as the vital centre of Scottish life. A like failure has accounted for her poor record in drama as compared with Dublin, but the defunct Repertory Theatre left an impulse which has been directed into national channels by the Scottish National Theatre Society, recently founded in Glasgow.

Photograph by] GREAT WESTERN ROAD AND KELVIN BRIDGE. [*Annan, Glasgow.*

With huge stone quarries and much money at her disposal, Glasgow was bound to take a high place architecturally among British cities, and at certain periods her building was directed by a Roman taste for symmetry and magnificence. The wealth of splendid architecture that she has hidden away in her blanket of smoke, to be blackened by soot and eaten by nitric acid, will only be fully revealed when the citizens of this proud and ancient city have at last made up their minds to follow the example of Pittsburg and consume their smoke in furnaces instead of breathing and swallowing it. Our abiding vision is of a Glasgow familiar with sunshine, a Glasgow in which trees can flourish and white collars last for two days, and in which the standard of public tidiness shall be equal to that of a respectable middle-class home; a Glasgow fit for commercial travellers to live in, and evoking from strangers such praises as were showered by Defoe upon the Glasgow of two centuries ago.

THE arrangements for the special post-graduate courses in surgery under the auspices of the Fellowship of Medicine and Post-Graduate Medical Association, which were noted in our issue of January 21st (p. 110), have now been completed. The course will be held from February 20th to April 1st, 1922, and the syllabus of the course may be had on application to the secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1. The fee for the course is twelve guineas.

England and Wales.

UNIVERSITY GRANTS.

THE Vice-Chancellor of the University of London has addressed to the Prime Minister a letter on the same lines as the memorandum presented by the Universities of Leeds, Liverpool, Manchester, Sheffield, Birmingham, and Durham, protesting against the proposal, understood to be seriously entertained, to reduce the grants made through the University Grants Committee to the universities. The general argument is the same as that set out in the note published in our issue of January 14th, p. 71. As in the memorandum of the Northern and Midland universities, it is pointed out, on behalf of the University of London, that through the grants they received the universities were enabled during the war to render to the nation services of vital importance, and that the restoration of the country to full material and intellectual efficiency demands a continued supply by the universities of well equipped men and women able to devote their abilities to the work of education and research, free from the crippling anxieties of inadequate means and uncertain prospects. The Treasury grant helped to make it possible to improve the salaries of teachers, but there is the danger that London will not be able to attract or retain the type of man most suited for university work. Fees for tuition and examination have been raised to a point as high as, perhaps higher than, can be justified if the University of London is to fulfil the primary obligations of its first charter. The Senate of the University therefore urges the Government that it should continue, and at the earliest possible moment increase, the sum spent on activities so vital to the well-being of the country, to the empire, and to mankind, as those carried on by the universities.

GENERAL NURSING COUNCIL FOR ENGLAND AND WALES.

A communication from the Ministry of Health, dated February 4th, 1922, states: A meeting of the General Nursing Council was held on February 3rd, at which Sir Wilmot Herringham presided for the first time since his appointment to succeed Mr. Priestley. All the members who resigned with the late chairman have now withdrawn their resignations, and the Council has resumed its normal activities. In view of various unauthorized and unfounded statements which have been made, Sir Alfred Mond thinks it desirable to state that these resignations had nothing to do either with the question of the syllabus of training or the question of the entry of certificates in the Register. There is, further, no foundation for the suggestion that there has been any controversy between the Council and the Minister. On the contrary the relations between the Council and the Ministry have been uniformly cordial.

MANCHESTER MEDICAL SCHOOL.

The medical school of Manchester is about to celebrate the jubilee of the amalgamation of the Manchester Royal School of Medicine with Owens College, and, at the same time, the 101st anniversary of the recognition of Mr. Jordan's classes in anatomy and surgery at Manchester, as qualifying for the examinations of the Royal College of Surgeons of England. Previous to the recognition of Mr. Jordan's classes no teaching given outside London had been recognized as qualifying for examination purposes by the college.

It is announced that Professor H. B. Dixon, C.B.E., F.R.S., will shortly resign the Sir Samuel Hall Chair of Chemistry at Manchester University; the high standing of the department of chemistry at Manchester has been steadily built up by the long and devoted labours of Professor Dixon, and his impending retirement will break a lengthy association.

LONDON NEUROLOGICAL CLINIC.

The fourth annual dinner of the London Neurological Clinic, established by the Ministry of Pensions, was held at the Imperial Café on January 28th, some fifty to sixty members of the clinic and their friends being present. Sir Maurice Craig and Dr. Henry Head were the guests of the evening, and among others present were Sir John Atkins, Sir Charlton Briscoe, Dr. David Forsyth, and Dr. C. R. A. Thacker. The toast of the Clinic was given by Dr. Danvers-Atkinson and acknowledged by the chairman, Dr. H. E. Davison, the medical superintendent of the clinic. Dr. Davison described the great increase in the activities of the institution during the past year; the total number of cases examined had been over 14,000 and of cases treated over 4,000. Clinics on similar lines had been, or were being, established throughout the country. Dr. W. A. Brend proposed the health of the guests. In reply, Sir Maurice Craig referred to the great development of psychotherapy during and since the war. There had never been a period in the history of psychological medicine when so much advance had been made in the views and theories on this subject. He congratulated the clinic on the excellent work it had been performing, and hoped that it might eventually work on a more comprehensive basis. Dr. Henry Head spoke of his association with the Clinic during the years 1917 and 1918, and expressed his appreciation of the good work that had been done. He referred to the difficulty which arose from the demand of the laity that the physician should be "pontifical," while the present state of our knowledge of psychotherapy often rendered that impossible. The clinic was collecting observations and investigating the causes of neurotic disorders, and it might be accepted that from its efforts good results had accrued and would continue to accrue. A musical entertainment concluded a very enjoyable evening.

Scotland.

LISTER MEMORIAL IN GLASGOW.

THE usual weekly meeting of the Glasgow Medical Lunch Club was held on February 2nd in Ferguson and Forrester's Restaurant, when Dr. F. W. Martin presided, and Professor Robert Kennedy was present as the guest of the club. His address took the form of an appeal for the retention of the Lister Ward in the Glasgow Royal Infirmary as a permanent memorial to Lister and the great work he accomplished for surgery and for mankind. It is a matter of common knowledge that it was in the Glasgow Royal Infirmary that Lister first introduced and practised his antiseptic system of surgery. The ward in which he worked still stands, forming the ground floor of the old surgical block not yet demolished, though out of use. In 1912 the infirmary managers decided to retain this original ward as a memorial to Lord Lister, to be utilized as a museum, and following this decision the Lister Memorial Committee proceeded to make a special appeal for funds and for objects of Listerian interest. However, in 1914 the managers rescinded the decision for retention and decided to complete the demolition of the old buildings. During the war the question remained in abeyance, but recently it was raised again at a meeting of the Lister Memorial Committee, when it was determined to approach the board of managers to reconsider its decision to remove the ward. They, however, adhered to their decision for demolition. On December 31st last Mr. A. Ernest Maylard published a letter in the *Glasgow Herald*, in which he reviewed the position and the managers' decision and made a strong protest against the proposed action of the board. This letter was replied to at the New Year's Day meeting in the infirmary by the treasurer, Mr. Timothy Warren, who discussed the question at some length, giving the reasons for the managers' decision. Professor Kennedy proceeded to deal with these reasons seriatim, setting forth strong arguments in favour of the retention of the ward, and hoped that wiser counsels might yet prevail so that such a valuable asset as the original Lister Ward should not be lost, but should remain as a permanent memorial to the man and his epoch-making work. Meantime, it should be noted that, following the rejection by the board of managers of the proposal of the Memorial Committee regarding the ward, it has been decided to use the money already raised to erect a seated statue of Lister adjoining the statue of his colleague Lord Kelvin, in the Kelvingrove Park, in front of the university of which he was so distinguished an ornament. Professor Kennedy made a strong appeal to the members for their support in this important matter. It was unanimously decided, on the motion of the Chairman, to forward to the managers of the Glasgow Royal Infirmary a letter of protest against the proposed demolition of the Lister Ward.

EFFECTS OF THE RELIGIOUS REVIVAL IN N.E. SCOTLAND.

In the annual report of the physician superintendent of Aberdeen Royal Asylum allusion is made to the recent religious revival in the north-east of Scotland, and the allegation is controverted that the revival was responsible for the mental illness of a number of patients admitted to the

asylum. He states that the revival was confined almost entirely to those engaged in the fishing industry, who are a religious people, but because of the nature of their calling and their consanguinity their emotions are easily aroused. Many reports of a sensational character concerning the effects of the recent revival have been made, but it had been found from personal observation and inquiry that they had been much exaggerated. Since the end of September there had been nine patients admitted from the parishes in which the revival movement had taken place, but this number had frequently been exceeded for a similar period within the last five years. In no case admitted could it be said that the revival was responsible for the mental illness.

Ireland.

ROBERT CAMPBELL MEMORIAL.

SUBSCRIPTIONS to this fund amounting to £859 17s. have already been acknowledged in the JOURNAL (January 15th, 1921). The following additional subscriptions have now been received:—

	£	s.	d.
*H. T. Hardy Green	2	2	0
The late John Simpson	3	3	0
R. M. Fraser	4	0	0
R. C. Crawford (Monaghan)	3	3	0
R. Maitland Beath	2	2	0
H. E. Rutherford (Larne)	1	1	0
J. Cathcart Eccles)	2	2	0
J. Campbell Hall (Monaghan)	5	5	0
J. T. Creery (Coleraine)	2	2	0
Robert Reid	5	5	0
Total subscriptions received ...	889	1	0

* £1 1s. of this subscription was already acknowledged (January 15th, 1921).

The Robert Campbell Oration.

The committee appointed by the subscribers to the Robert Campbell Memorial Fund have invited Colonel Thomas Sinclair, C.B., in recognition of his eminence as a surgeon, and his long and valued services to the Belfast Medical School, to deliver the first Memorial Oration. The oration will be delivered in the Medical Institute, College Square North, on Thursday, February 16th, at 8 o'clock. The orator will give an account of the life and work of the late Mr. Robert Campbell, followed by an address on the surgery of the blood. The chair will be taken by Sir John Walton Browne, M.D. Members of the profession are cordially invited. Tea will be provided after the meeting by the kindness of the trustees.

Correspondence.

THE RECOGNITION OF AORTIC INCOMPETENCE.

SIR,—In his useful paper on the frequency with which an aortic regurgitant murmur is missed, Dr. Brockbank does not mention the cause which seems to me the most important, a cause to which I drew attention at the meeting of the Association of Physicians in 1920.[1] It is that many aortic regurgitant murmurs are inaudible to the double stethoscope, although distinct to the single wooden stethoscope. I also pointed out that some slight aortic regurgitant murmurs, whilst inaudible to both stethoscopes, are easily heard by the unaided ear laid directly on the chest. I have now in hospital a lad whose diastolic murmur is heard with difficulty with the double stethoscope, a little better with the wooden one, and quite easily by the ear on the chest. In looking for an aortic regurgitant murmur, therefore, all three methods of auscultation should be used. It is unfortunate that the relative merits of different modes of auscultation are still generally unknown. The exclusive use of the double stethoscope at present in vogue is a misfortune for cardiology.—I am, etc.,

Exeter, Feb. 4th. W. GORDON.

SIR,—Reading Dr. Brockbank's interesting article on this important disability suggests the question, Was it not Dr. Graham Steele who said that in aortic regurgitation a stethoscope should only be used to clinch the diagnosis?

[1] *Practitioner*, July, 1920.

Stand the patient so that the light falls obliquely on his neck and casts a slight shadow on the inner side of the sterno-mastoid. Get him to stand still with his chin slightly raised, and note the excessive pulsation of his "swinging carotids." Then slightly abduct the arm of the same side, and slightly flexing and supinating it at the elbow, note the backward and forward writhing of the "locomotor brachial." Then grasping his wrist with your hand of the same side—that is, right with right—so that your palm is in contact with the flexor surface of his wrist, lift his hand above his head so as to accentuate the effects of the rise and fall of blood pressure, and note the distinct tapping against your palm characteristic of the "Corrigan pulse." Then seat the patient facing the light, slightly evert his lower lip, and press a microscope slide against the mucous membrane so as to get a central blanched area, and whilst keeping up a steady pressure, notice how this blanched island waxes and wanes with the ebb and flow of "capillary pulsation."

If these signs are present they suffice to establish the diagnosis of aortic regurgitation, even if at the moment no diastolic murmur can with certainty be heard.

Failure to hear a diastolic murmur may be due to the distraction of extraneous noises, from which handicap even members of medical boards are not immune. It may be due to the presence of numerous râles and rhonchi in the adjacent lungs and the inability of the patient to hold his breath long enough.

It may be due, as Dr. Brockbank points out, to the examiner contenting himself with a casual application of his stethoscope to the so-called aortic area in the second right costal interspace instead of also listening carefully at various points down the left side of the sternum.

And it may also be due to the elusive character of the murmur itself, which in the early stages of this disability may be perfectly obvious one day and impossible to elicit on a subsequent occasion, in either case tempting one to doubt the competence of a previous observer.

Sometimes, unlike a presystolic murmur, it may be heard more easily whilst the patient is standing than when lying on his left side, and the hardest variety of all, in my opinion, is where the semilunar valves close with a clean snap, followed by a short hiss, which is very easily missed. The importance of the early diagnosis of this disability, of course, lies in the fact that in the early stages the exercise tolerance may be so good as apparently to justify the man continuing an occupation which will inevitably accelerate the development of irremediable heart failure.

Although not exhausting the possibilities of this way of examining aortic cases I think I have sufficiently indicated the value of making full use of the unaided senses before having recourse to instrumental aid.

As regards the position of the apex beat, the advice to search outwards well in all heart cases where it cannot be at once definitely located in the normal position is most important. I remember one case where a diffused impulse outside the nipple line resolved itself finally into displacement of the heart due to old lung trouble, the apex beat being finally located near the angle of the left scapula. But as regards the position of the apex beat in aortic cases, as its outward displacement depends on the consequent heart failure, and this again on the degree and duration of the disability, it follows that the object of the examiner should be to establish the existence of incompetence before the displacement outwards has occurred.—I am, etc.,

Manchester, Feb. 6th. FRANCIS HEATHERLEY.

INFLUENZA.

SIR,—Sir G. Archdall Reid's remarks on past influenza epidemics are interesting and instructive. Having had ample opportunity of seeing many cases in the course of the intensive work of an extensive panel and mining practice, and having observed four cases in my own home, may I supplement them by a brief reference to the present epidemic? Several outstanding types have been noticeable in this area.

First, the ordinary type with pain in head, back, and limbs, and moderate pyrexia. Laryngitis and bronchial catarrh were common accompaniments; epistaxis was not so prominent a symptom as in the last epidemics, but "pink eye" was, I think, as prevalent. On the other hand, cerebral symptoms were very infrequent. Pneumonia supervened in several instances, as many as nine being notified in one day, more particularly among the very young and the old—10 months to 84 years in my practice. A few of these proved fatal, but treatment by means of mustard and flour poultices, stimulants, strychnine, the open window, large quantities of

cold water internally, and cold water sponging, appeared to favour recovery in many instances, one child, aged 14 months, recovering from influenzal bronchopneumonia after an illness of three weeks' duration. In the case of adults the compound powder of phenacetin and aspirin, mentioned in the BRITISH MEDICAL JOURNAL, yielded good results.

Secondly, there was a gastric form, with, in several instances, what might be termed a pseudo-appendicitis, which quickly resolved, and a few followed by catarrhal jaundice.

Thirdly, there was a type in which there was pharyngitis, usually accompanied by a high temperature, and followed by implication of the middle ear. In the case of my three daughters, one of whom contracted the disease outside this district, it took this form, the temperature at the acme being 104.1°, 104°, 103.8° F. respectively. One had epistaxis, and in all there followed an irregular temperature and pain in one ear, relieved when perforation and a purulent discharge occurred in two of them; in the case of the third, where the condition was evidently serous, resolution took place. Under treatment by means of cautious syringing with weak lysol, instillation of hydrogen peroxide and absolute alcohol, and nasal irrigation, all made a good recovery. My assistant contracted it locally, and was affected by the gastric type without sequelae.

I had only time to make a hurried examination in my private laboratory of swabs from the throat of one of my daughters, and found no sign of the pneumococcus, but chiefly the *Micrococcus catarrhalis*, many dead cocci being found within the phagocytes after a lapse of a few days, and there was no tendency to chest complications. I learn from an Edinburgh bacteriologist that the pneumococcus appeared to be the prevailing organism in that city.

Whether or not such epidemics will remit for a considerable period is on the knees of the gods, and meanwhile it behoves us to be prepared. As regards prevention, notification is out of the question, otherwise an economy axe of leviathan proportions would at once be requisitioned, but possibly an appeal could be made to practitioners to report voluntarily to the medical officer of health early cases of what appears to be the beginning of an epidemic. The Christmas and New Year holidays probably contributed their quota to the rapid spread of the malady, a plentiful supply of carriers and ambulatory cases being quite sufficient to propagate it. Vital statistics regarding the, as it is termed, recent milder epidemic will be found to be disquieting, and it is obviously in the interests of public health to forestall the loss in wages, impairment of health and heavy mortality that ensues.

The closing of schools after the organisms have taken their toll seems to me to be an ineffectual method of dealing with such outbreaks. To prevent recurrence, might not first cases and contacts of all ages be quarantined, for is the disease not more devastating in its effects in this country than plague, cholera, or even small-pox, and is it not of more vital importance to the community than the spread of foot and mouth disease?—I am, etc.,

J. BOYD PRIMMER, M.B., Ch.B., D.P.H.

Cowdenbeath, Fife, Feb. 5th.

SIR,—About three weeks ago I was called to a patient who had a temperature of 101° and some of the initial symptoms of scarlet fever, including redness of the face, excepting round the mouth. The following day the latter had disappeared, and I pronounced the case to be one of influenza. Eight days later a rise of temperature to 100° occurred, and coincidently the same redness of the face reappeared, again to disappear by the following day. After another eight days' desquamation of both hands, and, to a lesser extent, of the feet, supervened and lasted about five days. A few weeks previously I saw a case, which had been diagnosed as scarlet fever after the preliminary question had been mooted whether it might not be scarlet fever, in which desquamation of the hands had also taken place; it was very difficult to give a verdict as to which of the two it had been. In view of the first case mentioned above, it being obvious that it could not have been scarlet fever with two rashes at an interval of a week, it appears that some of the present cases of influenza very closely resemble scarlet fever. A colleague of mine to whom I spoke about the matter informs me that he has seen exactly the same thing occur in cases which were undoubtedly influenza.—I am, etc.,

EDGAR F. CYRIAX.

London, W., Feb. 6th.

PREVENTION OF VENEREAL DISEASE.

SIR,—An address on the failure of self-disinfection, which was delivered on November 14th last by Lord Gorell in his capacity as President of the National Council for Combating Venereal Diseases, is now on sale. Venereal disease has spread so vastly in recent years, and is now so great an evil, and Lord Gorell's address contains so many misstatements and misinterpretations of fact, that his essay ought not to pass without protest. All the statements we are about to make have long been known to Lord Gorell and his colleagues. None of them have been disputed, or are likely to be disputed. They are founded on evidence, all of which is accessible, and much of which may be found in official publications.

In 1906 Metchnikoff discovered a method of aborting syphilis which was quickly adopted by most of the armies of the Continent and the British navy. In 1913 a Royal Commission was appointed to consider the means by which the effects of venereal disease "can be alleviated or *prevented*." Some of the medical members wished to cite Metchnikoff, but were told that the feeling among the clerical and female members was such that any attempt to discuss prevention would wreck the Commission. Ultimately it advised the Government to increase the facilities for treating the infected, and for exhorting the community to chastity. But never yet in the history of medicine has the prevalence of any infectious disease been reduced by mere treatment. In addition the Commission warmly commended to the Government for its future guidance the newly formed National Council for Combating Venereal Diseases. In other words, it warmly commended itself, for the Chairman of the Commission became the President of the Council, and was accompanied to the directorate of the latter by about half his colleagues. The advice was accepted by the Government. The N.C.C.V.D. became very influential and ultimately was entrusted with considerable sums of public money, which it expends mainly in advertisements and on lecturers who expound the horrors of disease but are forbidden to mention prevention—that is, sanitation.

In 1916, when the nation was in peril, when trained soldiers were flowing by tens of thousands into the venereal hospitals, when the Colonial authorities were threatening to withdraw their forces unless better protected from sex diseases, when in every Dominion a disloyal faction clamoured against sending "our clean lads to the British cesspool," the authorities proposed to introduce self-disinfection into the army by means of "packets," somewhat after the navy fashion. But "influential people," members and supporters of the Council, intervened, and ultimately the authorities, fearing agitation, established instead "venereal ablution rooms" for what was described as "early treatment"—an inaccurate and stupid description, for the authorities and the influential people knew quite well that the attempt was to prevent disease, and the soldiers, as long as they escaped the consequences, cared not a jot whether it was by way of prevention or cure. But prevention suggests quick, and treatment slow, action; and it seems that a certain number of soldiers, deceived by the description, did actually use the disinfectants stored in the ablution rooms—permanganate of potash in pails and calomel cream in pots—for treatment after disease had declared itself. Moreover, the scheme was defective in that the first principle of efficient disinfection, timely action, was ignored, and in that men in isolated posts and on leave received no protection. Again, since the authorities feared that they might be charged with encouraging vice even such instruction as was given to the men was extremely vague and scrappy. At this time the infections among leave men in London alone were calculated at 1,000 a week. However, even delayed disinfection, no matter how inefficient, partial, and vilely taught, is better than none, and the army war rate of infection in the United Kingdom fell in *war* time from the lowest *peace* rate of 59 to 38.

But some medical officers, more concerned with the health of their charges than of possible censure, disregarded the official instructions—in the navy and in the army; before, during and after the war; in India, Egypt, England, France, the Cape, and the West Indies; and advised their men—merely advised, for they had no disciplinary power and were themselves offenders—to carry disinfectants if likely to get into danger. In every such case the men were told that the disinfectants were *merely* disinfectants, useless for cure, and that they must be used with all possible speed after danger had been incurred. Among the soldiers so instructed disease invariably fell to the vanishing point; none used disinfectants for treatment; and very few, if any, returned

infected from leave. As Lord Gorell notes: "A disinfectant does not disinfect in the hands of an unintelligent person any more than a typewriter types in the paws of a baboon." But it does disinfect, as massive evidence indicates, in the hands of an intelligent person, and the question is, Who made the British soldier unintelligent in this matter? Lord Gorell quotes figures from "a prominent venereal disease clinic" about men who used the "particular disinfectants" recommended by the Society for the Prevention of Venereal Disease. But did these men use the disinfectants as the society recommends? Lord Gorell is merely describing the results of "early treatment" as taught during the war. His statement that "if we examine the figures and experiences with which they deal we find in practically every case they come down to the success achieved by Sir Archdall Reid . . . dealing with army units on a small scale and carrying on personal and individual instruction," is merely nonsensical. Reid gave personal, but not individual, instruction; he had 2,000 men in charge; 20,000 passed through his hands; he was not the first, nor the last, to prevent disease; he did not work on the most extensive scale, nor under the most difficult conditions, nor was he the most successful worker. His experiences are well known partly because, being a civilian, careless of official censure, he published an account of them, and partly because it has been the policy of the National Council to represent his success as the only one. If Lord Gorell cares to challenge us we shall be happy to supply details; but he may find them set out with some fullness in Reid's own book, with which, doubtless, he is familiar.

Early in 1918, when the German offensive was impending and the British army depleted, the authorities became aware of the success which had attended the teaching of quick disinfection and ordered its extension throughout the army. It was earnestly impressed on them that since disinfectants were already present in abundance with every unit, not a shilling's expense nor a moment's delay was necessary. All that was necessary was *an order to medical officers to instruct their men in unequivocal language.* Nevertheless, delay occurred, and it was discovered that, following the advice of an "expert," the authorities were awaiting the manufacture and delivery of 4,000,000 bottles and 1,500,000 tubes. Protests proved unavailing, and the suggestive packet system was thus introduced, against the advice of those who are now accused of advocating it, by the very people who make that accusation. The delay gave "influential people" their opportunity, and the minor officials to whom the matter had been entrusted proved obliging. The packets, when at last delivered to medical officers, were accompanied by instructions that they were to be used for early treatment. When a medical officer stated that he intended to teach quick disinfection he was told that such a procedure would arouse the wrath of the Church. Conceive the imbecility of the whole procedure. At vast delay and expense disinfectants were transferred from pails and pots to bottles and tubes—nothing more. *Vehement protests and prophecies of certain failure were again made, and again proved unavailing.* Probably the protests never passed beyond the hands of the minor officials. The predictions were fully realized. The failure was complete.

Nevertheless, as is the way of successful procedures, the practice of quick disinfection continued to spread. In 1919 it was quietly adopted for the whole of the Portsmouth area—almost all Hampshire and Dorsetshire. Throughout this great area, in which were many camps and barracks, disease, as usual, fell to the vanishing point. But in it were large bodies of Americans, Colonials, and R.A.F. who did not belong to the British army, were not instructed, and were highly infected. Into it also came infected drafts from other areas, and on demobilization vast numbers of highly infected troops from overseas. The military authorities, therefore, kept a careful count, which differentiated locally acquired from imported disease. These figures are still available.

In 1919 an Interdepartmental Committee, composed of governmental servants and denounced from its inception as liable to be dominated by influential people, was appointed by the Ministry of Health to consider, among other problems of demobilization, that of venereal disease. Suitable statistics were furnished to it by the obliging officials. Obviously, the business of this Committee should have been to ascertain how it happened that while, in *many* countries, on *many* occasions, under *many* conditions, disease had been reduced to the vanishing point by *many* medical officers, it had continued to rage among neighbouring bodies of men, and how it happened that in these fortunate areas men did not return infected from leave, or use disinfectants for *treatment.* The evidence was experimental: for each attempt to prevent disease by careful teaching was an experiment: and the peculiarity of experiment is that a single success outweighs a thousand failures. In the face of success, failure indicates only faulty technique. But these considerations do not seem to have influenced the Committee. Instead it took the statistics of disease as a whole, lumped them together, assumed in spite of abundant evidence easily accessible in official records, that *quick* disinfection had been universally taught, announced that *self*-disinfection had failed, and, of all things in the world, called attention to the "neglected moral factor." Heaven knows what happened in the privacy of the Committee, but only the Chairman, Lord Astor, signed the report. He has since declared that the Committee was quite impartial and published the statistics as received. But did it publish all the statistics? Did it even ask for them? Why, for instance, was Sir James Barrett's magnificent success, achieved on a grand scale under the most difficult conditions in Egypt among the Australians, not so much as hinted at?

The scandal created by this report led immediately to the foundation of the Society for the Prevention of Venereal Disease. On December 10th, 1919, the president, Lord Willoughby de Broke, asked in the House of Lords for information about the Portsmouth area. He was informed by the late Lord Sandhurst, the then representative of the Ministry of Health, that venereal disease, which formerly had been twice as prevalent in the Portsmouth *area* than in the rest of the country, was in 1919 two and a half times more prevalent. This statement was immediately stigmatized in the public press by one of us as "monstrously inaccurate." Thereupon the Ministry of Health, in February, 1920, published a White Paper in which it was admitted that a great mistake had been made. It seems that the ingenious statistician of the Ministry had taken the diseases in the whole *area*—in the British army and out of it, imported and locally acquired—and attributed it to the relatively small garrison of Portsmouth *town.* Actually while disease in the rest of the country had *risen* from 38 to 64, that in the Portsmouth town had fallen from 92 to 54, and in the area to 47. The ingenious statistician, who is the same person as furnished the Inter-Departmental Committee and Lord Sandhurst with their figures, who to this day supplies the N.C.C.V.D. with its statistics, and who we understand will presently publish a characteristic statement, does not attempt to explain the *fall* of the disease rate in Portsmouth town and area; but he does try to explain why their rates did not rise in 1919 in correspondence with that in the rest of the country. This is his explanation: that the Portsmouth town and area had not a port of entry for overseas troops. But, as was certainly known to the statistician, Southampton, the largest port of all, in peace a part of the area, in war detached merely for administrative purposes, is a mere enclave in the area. Not a man passed out of it by land except into the area; and in 1919 the whole of the latter, including Portsmouth town, was flooded with overseas troops and its hospitals swamped with their diseases. Almost the whole of the 54 and 47 was due to imported disease, the infections acquired by the instructed troops being almost negligible. But the real facts about venereal disease in 1919 have not been made public. There is reason to believe that the figure 64 is quite inadequate. It was stated in Parliament that it was impossible to be precise. But, as we see, a regard for precision has not hitherto characterized the authorities directly concerned. Doubtless many thousands of men were demobilized while still infected, but this has always happened. Previously the authorities had relied on a comparison between the troops with the colours with those in hospital, and there was nothing to prevent the employment of the same method in 1919. But it is probable that the results were too horrifying, and, therefore, damning.

Lord Gorell insists that it would be impossible to instruct civilians. Examine, then, a series of undisputed facts. In 1885 the venereal rate of the army in the United Kingdom was 275. It decreased steadily and in 1913 was 50. Presumably, since soldiers infect and are infected by civilians, the latter shared in the decline, which must have had some effective cause. The Interdepartmental Committee attributed it to improved facilities for recreation, and the like. But can anyone in his senses believe that the young men of to-day are five times more moral than their fathers because of such things as football and light literature? The only alternative is that the decline was consequent on improved

sanitation. As far back as the eighties a knowledge of antiseptics had reached the public; disinfectants were present in many homes; men used them after dangerous intercourse, and some prostitutes offered them to their customers. The truth of this explanation (that disinfectants disinfected) was strikingly confirmed during the war. In 1916 ablution rooms for self-disinfection were established, and the N.C.C.V.D., assisted by public money, began an intensive campaign of exhortation and exposition of the horrors of disease—the former an appeal to morality, the latter to expediency. The military rate fell at once to 38; but both disease and immorality spread enormously among civilians, the increase being especially marked among women; for three out of four soldiers were now infected by amateurs. What explanation of all this is conceivable except (1) that self-disinfection succeeded (in a measure) among soldiers, (2) that exhortation failed among civilians, and (3) that the appeal to expediency made men, not chaste, but merely cautious, causing them to avoid the dangerous prostitute for the pursuit and seduction of the wretched amateur?

To sum up: Two methods of preventing venereal disease by self-disinfection have been practised in the army—unequivocal teaching of immediate disinfection, and equivocal teaching of delayed disinfection (that is, "early treatment"). Whenever and wherever the former has been employed disease has been reduced to the vanishing point; whenever and wherever the latter has been practised there has been relative failure; whenever and wherever this failure has occurred it has always been attributed to quick disinfection. Notwithstanding all its protests the N.C.C.V.D., except perhaps in the earliest months of its career, has never opposed *self*-disinfection in the army. It has opposed only the teaching of efficient disinfection. In 1916, when some form of prevention became imperative, it caused the substitution of venereal rooms for packets which, though suggestive, and therefore objectionable, could be used for quick disinfection. But in 1918, when it was proposed to discard the rooms in favour of simple teaching, people who are to-day prominent members of the Council first forced packets on the army; next, at the direct instigation of the Council, gave instructions for them to be used for early treatment; and lastly proclaimed the unhappy results of the latter as those of quick disinfection. This astonishingly fallacious reasoning has been exposed on many occasions and never been defended or denied. Nevertheless to this day the Council exploits it, and Lord Gorell is plaintive because his association is called a "fake society." The N.C.C.V.D. can easily prove its *bona fides* by meeting the charges made against it, or, better still, by joining the S.P.V.D. in a demand for a public inquiry, conducted not by officials but by men of independent standing.—We are, etc.,

H. BRYAN DONKIN,
G. ARCHDALL REID.

February 6th.

CERTAIN ASPECTS OF PAIN.

SIR,—At the Edinburgh meeting of the British Association for the Advancement of Science we brought forward experimental evidence that pain in the upper abdomen was associated with contractions of the viscera. We were informed at the time that the workers at the St. Andrews Institute for Clinical Research had reached a similar conclusion, and we have read with interest the fuller statement which has appeared in Sir James Mackenzie's letter (January 28th, p. 161.) It cannot be said that such a result is very unexpected, as it is now some ten years since Cannon and Washburn's observations on the painful hunger contractions of the empty stomach were published, and these have been confirmed.

The subject is, however, less straightforward than would appear at first sight, because we have found that contractions do not invariably cause pain, and they may abolish it when it is present. We are at the present time investigating the matter by the experimental method, combined with clinical observation. Without the former we do not think that the question will be satisfactorily elucidated.—We are, etc.,

W. W. PAYNE,
E. P. POULTON.

Guy's Hospital, S.E., Feb. 2nd.

ALPINE TREATMENT OF TUBERCULOSIS.

SIR,—The seven years' reign of the passport tyrants in all Foreign Offices and Consulates and other interferences with free international travel resulting from the war have had a disastrous effect upon the treatment of tuberculosis.

The English fled from Davos and Arosa before the invasion of German lung cases during the war. The British Davos Sanatorium, built under the patronage and name of Queen Alexandra, after vain appeals in your columns by the late Lord Balfour of Burleigh and others, has recently been sold by its committee to the Cantons of Schaffhausse and Thurgau. In spite of the efforts of Lord Balfour, Dr. Mitchell Bruce, Sir William Willcox, and several others who tried in vain to save it for the nation, this institution, which the Queen Mother had fostered and which had been a great blessing to so many English patients of moderate means, has been disposed of at a very low figure to the Swiss authorities.

During the war consumptive sanatoriums sprang up in England in all directions to meet urgent military necessities, and the treatment of tuberculosis in this damp and sunless climate grew rapidly.

I believe that I was the first English writer to call attention to the remarkable plateau of Montana. This place with Villars sur Ollon and Leysin on the north side of the Rhone Valley furnish unique conditions for the treatment of this terrible disease. Some very influential representatives of the medical profession, including Dr. Mitchell Bruce, Sir Humphry Rolleston, Sir William Willcox, Sir John Broadbent, Sir Charlton Briscoe, and others whose names are known throughout the medical world, visited Switzerland last summer as guests of the Swiss Government, to inspect the Swiss health resorts. As a result of these visits several articles appeared in the *Lancet*, *British Medical Journal*, and the *Journal of Tuberculosis*, in which the writers testified that the climate and other conditions of the north side of the Rhone Valley are of great value in dealing with the disease.

From time immemorial the dryness of the climate in the Valais on the north side of the Rhone has been so great that former generations have constructed what would be called in India huge "tanks" or small lakes for the irrigation of the vineyards which stretch along the whole of that side of the Valais. The long duration of sun produces wines almost as strong as the Italian wines. On the shortest day in winter these alpine slopes enjoy two hours more sunshine than the alpine lung resorts in German Switzerland.

I venture to suggest in your columns that the funds from the sale of the Queen Alexandra Sanatorium now in the hands of the committee might well be supplemented by some generous donor or donors for the purpose of re-establishing in French Switzerland the work carried on in Queen Alexandra's name with such benefit to our countrymen.

I am supported by the best medical opinion in saying that recoveries are more probable and more rapid in an institution situated in such a district as I have described than can be hoped for, under any circumstances, within the range of the British Isles.—I am, etc.,

MARTIN CONWAY.

House of Commons, Feb. 6th.

MENTAL HOSPITALS.

SIR,—I am much interested in Dr. Edwin Goodall's letter of February 4th, and cordially agree with him in his desire that early mental treatment should be available in "conjunction with, and as part of, general hospitals" with medical schools attached.

I presume that when Dr. Goodall uses the expression "free from any connexion with lunacy laws" he means free from certification. Yet if he wishes the indoor clinics to be under the Board of Control, surely it is the same thing as being under lunacy administration. There can be no more reason for placing uncertifiable cases under the board than for submitting general hospitals to the same control.

Surely Dr. Goodall is in error in implying that any penalty is incurred in treating uncertifiable cases on hospital lines where there is no detention. I looked, but in vain, for an explanation of the surprising fact that, in view of repeated extension in asylum accommodation by building new asylums, there should be at the present time 18,000 vacancies.

The whole atmosphere must be cleared and daylight let into the dark corners of the whole asylum system. As so admirably expressed in your leader to-day, "it now remains to arouse the interest of the public, to whom the whole question of mental disorder is one of vital concern."

The problem of mental disorder is not a simple one. It cannot be dealt with solely from a medical or from a legal aspect. It is a human problem. Every branch of the community is involved, and therefore ought to have a voice in the matter. All kinds of social questions need handling before there can be any hope of arriving at a satisfactory solution.—I am, etc.,

OCTAVIA LEWIN.

London, W., Feb. 4th.

HOSPITALS IN THE TERRITORIAL FORCE.

SIR,—"Late Captain *à la Suite*" and I agree on the main point, that the present system of the Territorial Force hospitals needs amendment, and it appears that the War Office thinks so too. But whether they will reform the organization on "Late Captain's" suggestions remains to be seen.

I see no reason for detailing in public the shortcomings of the Territorial Force hospitals. "Late Captain" and I agree that the system did not work satisfactorily. There has been too much newspaper criticism on both persons and military matters already, and I will not be a party to add more dirty linen for public washing.

I regret "Late Captain" thinks I wrote in anger. There was nothing to be angry about. I intended to say that I thought the views expressed by your correspondent were founded on a want of knowledge and that his remedies were unworkable.—I am, etc.,

Bristol, Feb. 2nd. BERTRAM M. H. ROGERS.

RUBBER DENTURES.

SIR,—In the BRITISH MEDICAL JOURNAL of January 28th Mr. Spencer draws attention to the fact that some patients who wear rubber dentures suffer from persistent irritation of the tongue in consequence; whereas, removal of the dentures, or their replacement by metal ones, causes its disappearance.

In the early seventies there was, among dentists, considerable controversy about this matter, and in 1876 the late Professor Attfield, F.R.S., at that time Professor of Chemistry to the Pharmaceutical Society of Great Britain, at the request of Messrs. Ash and Son, the well known dental manufacturers, undertook exhaustive chemical tests, which led him to the opinion that rubber was quite suitable for prosthetic work in the mouth, in that it was a perfectly innocuous substance.

A committee of the Odontological Society, who at that time were making their own investigations, received Professor Attfield's report from Messrs. Ash, who were largely responsible for the manufacture of dental rubbers. To this report they had little to add. They came to the unanimous conclusion that rubber (red or black) may exercise some irritating effects upon the tissues with which it is in immediate contact, but that there is not the smallest evidence that these are due to its chemical composition.

As far as I am aware, no other scientific report on this question has been published, as the findings of that committee have never seriously been disputed by the dental profession.

The fact that rubber is now so extensively used in prosthetic dentistry, I think, supports Professor Attfield's views. For his report see page 208, *Transactions Odontological Society*, 1876–77.—I am, etc.,

Watford, Feb. 3rd. SIDNEY FISK.

SARCOMA OF BONE.

SIR,—I beg leave to correct the brief summary in the JOURNAL of February 4th, p. 188, of a paper read by me at a recent meeting of the Leeds Division of the British Medical Association.

The paper dealt with pathological aspects of sarcoma of bone, and included a comparison of the highly malignant osteosarcoma with the lowly malignant myeloid sarcoma. Evidence was adduced to show that the latter was, however, undoubtedly neoplastic in nature, and not a haemorrhagic osteomyelitis, as suggested by some recent American writers. It was pointed out that, unless local removal was done thoroughly, there was considerable risk of recurrence *in situ*, and that curettage especially must be done in a very careful and thorough manner.—I am, etc.,

University of Leeds, Feb. 4th. M. J. STEWART.

MULTIPLE TOOTH EXTRACTION.

SIR,—Mr. Denison Pedley (January 14th, p. 80) makes a very interesting statement, its very simplicity adding value to its truth. He says: "It is rarely necessary to remove all teeth when affected by pyorrhoea alveolaris, and any inflammatory condition of the gums may be, and often is, mistaken for this somewhat intractable, but by no means incurable, disorder." "That greater care should be exercised by medical practitioners before pronouncing definite decisions is easily proved."

The frequency with which patients are advised to sacrifice the whole of their teeth without positive proof of the necessity of so doing is really astounding. During the past few years I have had a very large number of cases of septic conditions of the gums referred to me for radiographic examination, and it is surprising how large a percentage of these patients are found not to be suffering from pyorrhoea alveolaris at all. In the larger number the trouble has arisen from peri-apical sepsis, the pus from which has found its way to the gingival margin and burrowed along in either direction and oozed from between the teeth.

The identification of the foci of sepsis will indicate a local operation involving probably the loss of one or two teeth only. The medical practitioner is undoubtedly awakening to the wisdom of ascertaining the true condition before operation, but he is not yet fully awake.—I am, etc.,

London, W., Jan. 27th. CHRISTOPHER KEMPSTER.

BIOLOGICAL EFFECTS OF *X* RAYS.

SIR,—It appears to me to be a great pity that Dr. Mottram (p. 164) should have been so hasty in his criticisms of Dr. W. J. Turrell's theory of the action of *x* rays. He speaks scathingly of a "mythical toxin." It is evident that Dr. Mottram has not had the advantages that I have enjoyed of having many talks with Dr. Turrell on the subject, and of reading that part of his MS. in which he deals at length with his theory and its basis. As I understand that Dr. Turrell's book will be published this week, Dr. Mottram will have an opportunity of a closer study of this very interesting problem, after which he may, or may not, feel inclined to enter into a controversy with Dr. Turrell himself. It would be presumption on my part to take up the cudgels on Dr. Turrell's behalf.—I am, etc.,

J. CURTIS WEBB,
Honorary Radiologist, Gloucester Royal Infirmary.

Cheltenham, Jan. 31st.

Obituary.

WILLIAM CRAIG, M.D., F.R.C.S., F.R.S.EDIN.,

Lecturer on Materia Medica, Surgeons' Hall, Edinburgh.

THE death, on February 3rd, of Dr. William Craig, in his 90th year, has divided another of the comparatively few remaining links uniting the medical Edinburgh of the twentieth century with that of the sixties and seventies of the nineteenth. The son of a farmer of Lanarkshire, he was born on March 28th, 1832, received his school education in Ayrshire, and took out arts classes in Glasgow University. He graduated at Edinburgh in 1868 as M.B., C.M., and L.M.; he passed on to the M.D. degree in 1870, and soon thereafter began his life-work of teaching materia medica and therapeutics in Surgeons' Hall School of Medicine, a task which he did not relinquish till two or three years ago. During these many years he never lacked students, and he taught a rather uninteresting subject with such practical good sense and so clear an understanding of the undergraduate's needs that he retained marked popularity, and was held in kindly reverence as the father of the extramural school. He was also one of the small group of teachers who formed the board of studies of the Medical College for Women at its inception in 1890, and he remained lecturer to the women students till their entrance within the walls of the University in 1916. He had become L.R.C.S.Edin. in 1868, and proceeded to the Fellowship in 1874; he was also a Fellow of the Royal Society of Edinburgh and of several medical societies, with two or three of which his connexion was long and most active. For instance, he joined the Obstetrical Society in 1870, and from 1875 to 1910 he was its treasurer; he edited the *Transactions* of the Medico-Chirurgical Society from 1882 to 1909; and he was president of the Botanical Society.

For many years Dr. Craig was an examiner in materia medica for the College of Surgeons, and for a time he performed the same duty for his Alma Mater. He was on the medical staff of the New Town Dispensary; and, last but not least, he conducted a large private practice in the Bruntsfield district of Edinburgh, where his home was situated. He leaves two sons, one of whom is a medical practitioner in Edinburgh. All his life long he enjoyed the best of health, and until within two or three days of his death he had scarcely ever had to keep his bed. He was, as may be expected, fond of an outdoor life, and was a capital shot. He was an elder, first in the United Presbyterian and then in the United Free Church of Scotland. His pen was not inactive; for many years he contributed the Monthly Periscope of Materia Medica and Therapeutics to the *Edinburgh Medical Journal*

and to the *Scottish Medical and Surgical Journal;* he edited the third edition of Milne's *Materia Medica* and of Milne's *Posological Tables;* he was the author of a *Manual of Materia Medica* and of *Posological Tables*, and he made contributions to various journals on "Changed Aloin," on "Jaborandi," on the "External Uses of Hydrate of Chloral," and other matters.

We have received the following appreciation, signed "F. M. C.":

In his 90th year, after a short illness, Dr. William Craig, the oldest medical practitioner in Edinburgh, has passed away, leaving behind him kindly memories of pleasant associations and the record of a helpful, active life. He was indeed a practical example of what loyalty and devotion to a profession can accomplish, for, while busily engaged in practice, he yet found time to support the leading medical and scientific societies, and considered it a duty to do his utmost by laying his capable business-like methods at their service in most unsparing fashion. A regular attendant at their meetings, he contributed interesting articles on various subjects, chiefly pharmacological, and exhibited pathological specimens. He occupied for many years the position of treasurer to the Edinburgh Medico-Chirurgical Society, and also signalized his duties as editor of its *Transactions* by compiling, in conjunction with his son, Dr. Peter Craig, a valuable analytic index of the first twenty volumes (new series). His services were also greatly in request in the Royal College of Surgeons and in the Obstetrical Society of Edinburgh, in addition to finding outlet elsewhere. Dr. Craig was an ardent botanist, and in his student days won the gold medal for his herbarium. A prominent member of the Botanical Society, he was also associated with the Botanical Club and the Scottish Alpine Club, where he was equally zealous and foremost. He spent many a happy day in mountain and glen, always welcome and in no small measure enhancing the enjoyment of every excursion. Upright, earnest, and genial, his interests in the old activities never waned, nor will his personality and kindly smile fade from the recollections of his numerous circle of friends.

We regret to record the death of Dr. JOHN FRANCIS PRIDIE, which took place suddenly at Southport, on January 27th. Born in Edinburgh, Dr. Pridie received his medical education at the university there, graduating M.B., C.M. in 1887. He afterwards studied at Göttingen, and held resident appointments at Glasgow Royal Infirmary, Edinburgh Royal Asylum, and Southport Infirmary. He went into practice at Chingford, near London, where he remained for thirteen years, but he returned to Southport seventeen years ago, entering into partnership with Dr. Barwise. In 1911 he became a member of the Town Council, on which he did much useful work, particularly in connexion with public health, and for the past year or two he had been vice-chairman of the health committee. He was much interested in medical affairs, and was president of the Southport Division of the British Medical Association, chairman of the Local Medical and Panel Committee, and vice chairman of Southport Medical Society. Dr. Pridie led a strenuous life, for, in addition to the claims of a large general practice, he devoted much attention to his municipal work. He leaves a widow and two sons, the elder of whom won the D.S.O. in the war, and has just passed his final examination in medicine.

Universities and Colleges.

UNIVERSITY OF OXFORD.

IN a congregation held on Thursday, January 26th, the following degree was conferred:

BACHELOR OF MEDICINE (B.M., B.CH.).—Gordon Cranstoun, Oriel College.

Science Departments.—In a congregation held on Tuesday, January 31st, a statute was introduced to modify the present method of administration of the natural science departments. The statute, which it is understood did not meet with the approval of the staffs of the natural science departments, was opposed. On a division, the preamble of the proposed statute was lost by 65 votes to 62. It is understood that a new statute will be brought in at an early date.

Radcliffe Travelling Fellowship.—An examination for a Fellowship of the annual value of £200, and tenable for three years, will be held during the present term at the University Museum, commencing on Tuesday, February 21st, at 10 a.m. Candidates must have passed all the examinations required by the University for the degree of Bachelor of Arts and for the degree of Bachelor of Medicine. They must not have exceeded four years from the time of passing the last examination required for the degree of Bachelor of Medicine. The successful candidate must before election declare that he intends to devote himself during the period of his tenure of the Fellowship to the study of medical science and to travel abroad with a view to that study. The Regius Professor of Medicine and the Examiners, two months before the expiration of the second year after the election of each Fellow, present a report on the work done by him to the Electors, who may, if they think the report unsatisfactory, declare the Fellowship forfeited. The examination will occupy four days. Papers will be set in physiology, pathology, and preventive medicine, and a subject will be proposed for an essay. There will also be a practical examination in pathology.

The Services.

REVIVAL OF THE MILITIA.

IN April, 1908, a Special Reserve of Officers was created by Royal Warrant and officers of the Militia were given commissions therein. A new Royal Warrant, dated January 27th, 1922, revives the "honourable designation of Militia for this branch of Our Service." Accordingly, this branch of the Reserve of Officers (with one exception in the case of Household troops) becomes part of the Militia, and officers who were serving therein on October 1st, 1921, are deemed officers of the Militia as from that date. An Army Council's instruction on the new Warrant states that the conditions of service and of remuneration of the Militia are under consideration. When they are published officers of the Special Reserve of Officers will be given the option of continuing to serve under those conditions or of resigning their commissions. In the meantime they will be subject to the existing regulations.

Medical News.

MR. PERCY SARGENT, C.M.G., D.S.O., has been appointed honorary consultant surgeon to the Ministry of Pensions.

A COURSE of eleven clinical lectures on the diagnosis and treatment of cancer will be given at the Cancer Hospital, Fulham Road, S.W., on Tuesdays and Fridays, at 4 p.m., commencing February 21st, when Sir Charles Ryall will speak on cancer of the tongue. The lecture on Friday, February 24th, will be given by Mr. W. E. Miles and will deal with cancer of the rectum. Medical practitioners are cordially invited to attend.

THE anniversary dinner of the Medical Society of London will be held at the Wharncliffe Rooms, Hotel Great Central, on Wednesday, March 8th, at 7.30 o'clock.

MR. E. B. TURNER, F.R.C.S., will lecture on "Sex relationships," as discussed at the recent Church Congress, on Thursday, February 16th, at 8 p.m., at the Essex Hall, Essex Street, Strand. The meeting has been arranged by the Society for Constructive Birth Control and Racial Progress.

THE estate of the late Sir G. Sims Woodhead, who died on December 29th, has been sworn of the gross value of £6,579.

IN connexion with Professor Henri Hartmann's lecture before the Medical Society of London on Monday next, February 13th, at 8.30 p.m., an exhibition of specimens illustrating inflammatory strictures of the rectum is being arranged, and will be on view in the Society's rooms on Monday afternoon and evening and on Tuesday morning.

A COURSE of five lectures on recent researches on the accessory food factors (vitamins) will be given by Dr. S. S. Zilva at the Battersea Polytechnic on Thursdays at 5.45 p.m., beginning on March 2nd.

A MEETING of the Medical Officers of Schools Association will be held at the house of the Medical Society of London, Chandos Street, W.1., on Wednesday, February 22nd, when Mr. George H. Widdows, F.R.I.B.A., architect and surveyor to the Derbyshire Education Committee, will open a discussion on the ideal class room.

AT the meeting of the West Kent Medico-Chirurgical Society to be held in the Board-room of the Miller General Hospital, Greenwich, to-day (Friday), at 8.45 p.m., Dr. C. O. Hawthorne will deliver an address, entitled "Some Pulse Tracings and their Meanings."

THE number of deaths from influenza during the week ending February 4th shows, as was expected, an appreciable decrease. In the 105 great towns of England and Wales the figures were 1,144 against 1,450 in the previous week; in the 96 great towns there were 1,121 deaths from the disease as against 1,420; in London the figures were 191 against 320. In certain South Wales towns there were considerable increases, and also in certain northern towns, including Liverpool, Wallasey, Leeds, York, and West Hartlepool, whilst in other places the numbers declined. The figures for Edinburgh and Glasgow were also below those for the previous week.

AT the annual dinner of the Incorporated Vermin Repression Society, with Dr. Nathan Raw, M.P., in the chair, Colonel S. J. M. Auld suggested that the administration of the Rats and Mice Destruction Act (1919) should be taken out of the hands of the Ministry of Agriculture and handed over to the Ministry of Health. They did not ask for the prosecution of the small householder, who was really a sufferer from the overflow of vermin from congested centres, but they wanted to get at the headquarters of the rat, which was in wharves, warehouses, ships, and agricultural buildings, and they called for more prosecutions of the chief offenders. Mr. Alfred E. Moore (honorary director of the society) said that there had been few statutes so badly administered as the Rats Act; the Ministry of Agriculture was no friend of the Act, and the four men responsible for enforcing it upon the local authorities had been dismissed. "Rat weeks" in London were useless, because the rat simply used the sewers as highways to seek temporary sanctuary where they were not being persecuted. Mr. Mark Hovell, Dr. A. Balfour, and Professor F. Hobday were among others who spoke at the dinner.

THE Umberto I Prize of the Rizzoli Orthopaedic Institute, Bologna, has been awarded to Dr. Murk Jansen of Leyden in recognition of the high quality of the work submitted by him to the adjudicators.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

"W. H. B." asks for advice in the treatment of an obstinate case of pityriasis rubra.

INCOME TAX.

"CUSTOMS" is in the service of a borough council. For 1919-20 he was first assessed on the salary payable for that year; later an additional assessment was made on a bonus which was in force for a portion of 1919–20, and now a further charge is raised to cancel certain allowances which ceased to apply at the higher amount of income.

*** Our correspondent not unnaturally resents such repeated applications, but unfortunately he has no remedy. The Revenue authorities are entitled to correct an assessment within three years, and if his total income for 1919-20 exceeded £800 the cancellation of the allowances is legally justified. If that total exceeded £800 but not £1,000 he is entitled to an allowance for each child—in excess of two—who is a proper subject of claim—for example, if the allowance for three children has been cancelled £40 for one child should be restored.

LETTERS, NOTES, ETC.

HERPES AND VARICELLA.

DR. H. B. WILLOUGHBY SMITH (Gainsborough) writes: I have recently had an interesting instance of the association or possible connexion between herpes zoster and varicella. Early in January this year I was called to see a boy, aged 7 years, who had a very well-marked eruption of herpes zoster, covering practically the whole of the area supplied by the third dorsal on the left side. Exactly twenty-one days later this boy's young sister developed a typical varicella eruption over the whole body. There are no cases of varicella in the vicinity, and neither child had been exposed to any possible outside infection. The connexion appears too close to be mere coincidence.

DR. ST. GEORGE B. DELISLE GRAY (Medical Officer, British Hospital, Oporto) writes: It may be of interest to add the following two cases to the many already published of the association of herpes with varicella. There was an epidemic of chicken-pox last year in Oporto. Towards the beginning of this epidemic I was called in to see a little girl who had typical varicella. On making enquiries as to contacts and other members of the family the mother volunteered the statement that about a fortnight before she had had similar spots "on one side of the body which I thought was shingles." I have no doubt that she was right in her diagnosis. The other two child members of the family had chicken-pox in due course. About the same time I was consulted by the head of a school, who had a severe attack of herpes. A fortnight later there was an outbreak of chicken-pox at the school among the boarders at his house.

TUBERCULIN IN ASTHMA.

DR. F. E. GUNTER, D.S.O. (London, W.) writes: I was much interested in Dr. J. L. Rentoul's letter of February 4th, p. 212, on the use of tuberculin in asthma. He states that some cases do well but not all. The reason for this probably is that by no means all cases of asthma are of tuberculous origin. I test my cases with T.A.F. after the method advocated by Dr. Camac Wilkinson. If they react then I treat them either with P.T.O., which is excellent, or some other tuberculin preparation. If there is no reaction it is wiser to look for another cause of the asthma, such as some food idiosyncracy.

DEPILATORIES.

A CORRESPONDENT, who has a lady patient with marked growth of hair on the chin, writes to inquire about an efficient depilatory. We published in 1920 (August 7th, August 21st, and September 11th) some notes upon this subject, which may be summarized as follows: The most satisfactory method of removal from the upper lip and chin is apparently by electrolysis; this, however, has the drawback that a slight degree of scarring is probable, while a certain percentage of hairs usually return at a later date. A depilatory powder which has been recommended consists of equal parts of barium sulphide and zinc oxide; this is made into a thick paste with water immediately before using. The directions are to rub the paste upon the lip or chin, and leave it on until it causes a slight smarting (one or two minutes); it is then washed off with water and some soothing ointment applied; the hair can be rubbed off in about ten minutes. A second, or even a third, application may be necessary, and it is better to go slowly than to risk wounding the skin by leaving the paste on too long the first time. Another correspondent wrote asking if there was any real objection to shaving with a safety razor. He had recommended this to two lady patients, with complete satisfaction to them as regards the result; of course it had to be done at fairly frequent intervals.

Our correspondent, therefore, can have his choice of treatments, but, as depilatory powders are really only a form of shaving, it is difficult to see any objection to the use of a safety razor, and even the best depilatories are apt to cause some irritation of the skin.

PELIOSIS RHEUMATICA.

A Correction.

DR. F. G. CLEMOW, C.M.G. (Constantinople), writes: A small but unfortunate misprint occurs in my letter on this subject, which you were good enough to publish in your issue of January 28th (p. 168), and I shall be much obliged if you will allow me to make the following correction. The penultimate sentence should read: "Unfortunately, neither the patient nor his friends had realized the gravity of the condition and sent for me during the twenty-six or twenty-seven hours. . . ." My object was to state that patient and friends did *not* realize the gravity of the condition, and did *not* send for me, whereas the letter as printed exactly reverses the latter statement.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32, 33, 36, 37, 38, and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 34 and 35.

THE Home Secretary proposes to appoint a physician as medical referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 32 (Norfolk). Applications to the Private Secretary, Home Office, by February 21st.

THE following vacant appointments of certifying factory surgeons are announced: Cheltenham (Gloucester), Pollokshaws (Lanark), Topsham (Devon), Wool (Dorset).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line	0	1	6
Whole single column (three columns to page) ...	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.